**3.1.1 Grants received from Government and non-governmental agencies for research projects / endowments in the institution during the (2022-23)**

| S.No | Name of the Principal Investigator/Co-investigator | Name of the Funding Agency | Department of Principal Investigator | Amount Sanctioned | Duration of the project | Sanction letter page number |
|---|---|---|---|---|---|---|
| 1 | Dr S Kishore Reddy | Conscience Technologies | Electronics and Communication Engineering | 1.05lakhs | 4 Months | 17 |
| 2 | Dr Siddhartha B | SHELLX Software Solutions Pvt.Ltd | Electronics and Communication Engineering | 3.45 Lakhs | 5 Months | 36 |
| 3 | Dr Hameeda shaik | MANAC Infotech | Computer Science Engineering | 2.15 Lakhs | 6 Months | 52 |
| 4 | Dr Y Ramesh Babu | MINDWAVE Informatics | Mechanical Engineering | 0.75lakhs | 4 Months | 66 |
| 5 | Dr Shakeer basha | SashakT HR Services Pvt Ltd | Computer Science Engineering | 0.75lakhs | 4 Months | 87 |

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Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

CONSCIENCE TECHNOLOGIES

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Date: 23/07/2022,

To,

The Principal,

Avanthi Institute of Engineering and Technology,

Gunthapally, Hyderabad.

**Attention**: Dr.S. KISHORE REDDY,Associate Professor of Departmentof Electronics andCommunication Engineering.

Subject:Automated Street Light Controller and Manhole Monitoring with Fault Detection &Reporting- Regarding

I am pleased to inform you that the R&D Team at CONSCIENCE TECHNOLOGIES,Hyderabad is pleased to approve a grant of INR 1 lakh for the project "Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting"

You are requested to prepare a detailed schedule and roadmap for the project. Completion and also the detailing on the utilization of funds within 10 days to release the payment.

Looking forward to a meaningful collaboration with AVIH, Gunthapally

Regards

Conscience Technologies DSNR, HYD-50

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#17-83/2C, 3rd Floor, Opp:Bank of Maharashtra,
Annapurna Function Hall Line, Dilsukhnagar, Hyderabad-500060 Email: info@consciencetechnologies.com
www.consciencetechnologies.com PH: 040 60 12 11 99

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

Dr.G. Ramachandra Reddy, M.Tech, Ph.D
Principal


AVIH/2022/R&D PROJECT Dt: 03.08.2022,

TO
The Manager,
CONSCIENCE TECHNOLOGIES,
Hyderabad.

**Sub:** Submission of detailed proposal of Automated Street Light Controller andManhole Monitoring with Fault Detection & Reporting.

Respected Sir,

With reference to letter received from your end regarding **Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting**. We are happy to submit detailed proposal along with the milestones of Design and hardware Implementation of Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting. We request you to discuss with your internal R&D team and communicate for further discussion.

Thank you and looking forward for your collaboration.

Principle Investigator

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**Section A: General Information:**

| | |
|---|---|
| **Project Title** | Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting |
| Project Type<br>Research Design &Demonstration of Automated Street Light Controller Research<br>Other | Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting |
| Project Location/s<br>(District State)(Must be in India) | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Stage of development<br>(initial concept proof of demonstration/scale up) | Proof of Concept - Demonstration |
| Lead Implementing Organization | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Any Partnering:<br>Organization:<br>In INDIA | NO |
| (1) Total Funding Request(INR In lakh) | 1,05,000 Rs/- |
| (II) Contribution in Cash/kind from lead/partnering institution if any | NO |
| Total cost (I+II)= | 1,05,000 Rs/- |

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**Section B: Project information: Report submitted**

**Project Description**

## I. Introduction

The project work described here is quite useful for the state electricity and municipal departments, generally the line men either he belongs electricity department or municipality, it is the duty of him to energize the street lights in the evening, preferably after Sun set, and he is supposed to be switched off these lights in early in the morning, when the Sun is raised again. But unfortunately, due to many reasons the line men may forget to switch off these lights in the morning[1]. Often at many places these lights remain in on condition during the day time also, this is because of the negligence of line men. In this regard lot of energy is wasted, resulting power cuts. There are many reasons for power cuts, in that list this reason also can be added and it can be underlined. This project work also deals with password-based phase line controller is a simple project that helps in controlling the electrical line with help of a password. Now a day's electrical accidents to the line men are increasing while repairing the electrical lines. This is due to the lack of proper communication between the electrical sub-station and the maintenance staff. This project gives a solution to this problem to ensure the safety of the line man. In this proposed project work, the control (ON/OFF) of the electrical line lies with the line man. The concept is designed such that maintenance staff or the line man has to enter the

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password to switch ON/OFF the electrical line. If there is any fault in the electrical line or any repair is to be done to the line, then the supply to the electrical line is cut off by entering the password and can comfortably repair the line. After repairing the line, by entering the password again, supply to the electrical line will be restored. Separate passwords can be assigned to different electrical phase lines. The system is designed with a single line with two different passwords. At the output a relay is connected and this relay contact is used to make or break supply to the electrical line. Presently the demo module is constructed with two street lights all of them can be controlled through the password.

Most of the cities adopted the underground drainage system and it is the duty of managing station (Municipal Corporation) to maintain cleanliness of the cities. If the drainage maintenance is not proper the pure water gets contaminate with drainage water and infectious diseases may get spread. The drainage gets blocked during rainy season, it will create problem for routine life such as traffic may get jammed, the environment becomes dirty, and totally it upsets the public. Suppose if there should bea facility which would be there in Municipal Corporation (managing station) that theofficials come to know immediately after blocking of drainage in which area and the exact place where it is blocked and it also informs if the manhole lid is open. So our main focus is monitoring manholes using sensors. If drainage gets blocked and water overflows, and if manhole lid is opens, it is sensed by the sensors, then that sensor sends information via GSM module which is located in that area to the corresponding managing station.

## II.Functional Description of the Project

The detailed circuit description of the project work is explained along with circuit diagram. For better understanding total circuit diagram is divided into various sections and each section circuit description with its circuit diagram is provided in this chapter. One part of project describes about monitoring the line that is not working and inform the same to the concern authorized person through GSM technology. In line which is not working i.e., faulty is sensed and the information will be transmitted through GSM module automatically. This project is focused on the necessity of the automated street light system and the peculiar way of implementation with embedded system tools. The microcontroller is used as the brain to control the process involved. Relay is used as an automatic switch in this system that acts as a circuit breaker[2]. Light Dependent Resistor (LDR) is a type of sensor which actually does the work of sensing the light (line) working or not. The system with LDR sensors and GSM are used to intimate the status of light (line) ON/OFF status i.e., fault condition to the concern authorities through GSM. Through the keyboard, by entering the password, supply to that particular line can be disconnected by the line man for repairing. After repairing is done, the same line can be restored by the user himself.

### i) Arduino controller

The **Arduino Mega 2560** is a microcontroller board based on the ATmega2560. It has 54 digital input/output pins (of which 15 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. The Mega 2560 board is compatible with most shields designed for the Uno and the former boards Duemilanove or Diecimila. The main reason for using this is the additional features that are inbuilt with this board. First feature is the large I/O system design with inbuilt 16 analog transducers and 54 digital transducers that supports with USART and other communication modes. Secondly, it has inbuilt RTC and other features like analog comparator, advanced timer, interrupt for-

controller wakeup mechanism to save more power and fast speed with 16 Mhz crystal clock to get 16 MIBS. It has more than 5 pins for Vcc and Gnd to connect other devices to Arduino Mega.

**ii) Light Sensing Circuit**

A Light Dependent Resistor (LDR) or a photo resistor is a device whose resistivity is a function of the incident electromagnetic radiation. Hence, they are light sensitive devices. They are also called as photo conductors, photo conductive cells or simply photocells[3]. They are made up of semiconductor materials having high resistance. A light dependent resistor works on the principle of photo conductivity. Photo conductivity is an optical phenomenon in which the materials conductivity (Hence resistivity) reduces when light is absorbed by the material.

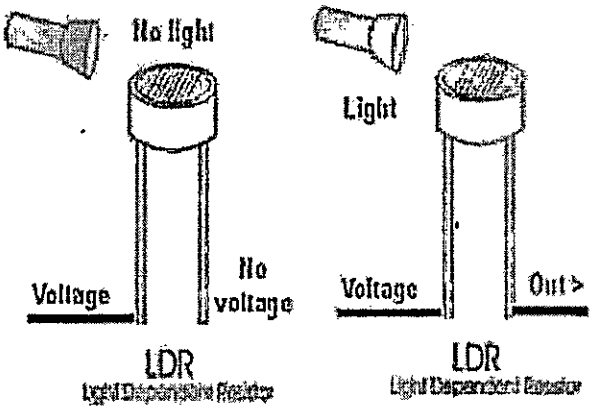


**Figure 1. Light dependent Resistor**

**iii) Water Level Sensors**

A lot of varieties of water level sensors are available for us in the market with different technologies. Here in this module, the water level sensors[4] for drainage pipeline used are the common equipment generally used is the copper electrode. For identifying the level of the water in the pipe, it is equipped with two copper electrodes. One is the low-level indicator that is placed at 20% capability of the pipeline and the second electrode is the high-level indicator that is placed at the 90% capability of the pipeline. In addition to these two copper electrodes one more electrode is used, called as the common electrode that is given the Vcc (supply), connected till below of the low-level indicator electrode. The outputs of these two-level sensing electrodes are connected to the microcontroller through the switching circuits designed with transistors. The outputs of the electrodes is connected to the base of the low power transistor 547, whose emitter is grounded and the collector is connected to the micro controller, which is also given supply of 5v. As water is a good conductor the copper electrodes outputs will be in high state until the tank is full in the pipeline, by which all the transistors will be in ON state and the controller will be receiving a logic high signal because the supply will be grounded through the transistor when it is in conduction. And whenever the water level decreases the electrodes will be in air and the output will be low by which the transistor will be OFF state. So the supply from the collector does not go to the controller and thus the controller receives logic low signal, so that the controller knows the water level is decreased. So when the controller gets a high signal from the 90% level electrode, automatically transmits a message through the GSM to the concern authorities. And thus the concern person will get the

information about the water level of the drainage pipeline and can take necessary action to clear it early before it overflows.

**iv) Trigger Circuit**

In this circuit IC555 timer is used as mono stable mode of configuration. The resistance of the LDR will vary from minimum to maximum according to the natural light fallen on it. The dark resistance of the LDR will be more than 100KΩ and the light resistance will be less than 1KΩ. Hence, whenever light falls on the LDR, the resistance will come down and this makes a trigger signal to the IC 555 timer. Thereby the output of the timer becomes high which is fed to the controller. During the night the resistance of the LDR will be very high by which the output of the timer remains in zero state. Depending on these high and low signals, the controller is programmed to send the information automatically through GSM to the line man mobile. The LDR will have two resistances, i.e., dark resistance and light resistance. The dark resistance is the resistance, when no light falls on the LDR. This resistance will be more than 100K□. The light resistance is the resistance, when light falls on the LDR i.e., if the LDR is exposed to the bright light or Sun light then the resistance of the LDR will become less than 1K□. The resistance of the LDR will vary according to the light intensity (Inversely proportional). This LDR is designed in association with IC 555 timer configured as 'Mono-Stable' mode of configuration. The IC 555 timer is a versatile IC, consists of two built in comparators, threshold at 1/3Vcc and 2/3Vcc. The 1/3 Vcc comparator is monitored at Pin No.2. The 2/3 Vcc comparator is monitored at pin.6. These pins are shorted and connected to the ground through the LDR. Thus if pin no.2 voltage is less than 1/3Vcc, output of the IC becomes high, similarly, if the voltage is more than 2/3Vcc, output of the IC becomes zero i.e., whenever the natural light falls on the LDR, the resistance of the LDR will become less than 1K□ and makes the voltage at Pin no. 2 or 6 less than 1/3 Vcc, which in turn triggers the IC whose output is connected to the controller that energizes the relay. This relay contact is used to provide supply to the outdoor lights.

Once the LDR resistance becomes less than 1K□, this in turn changes the state of internal comparator of 555 timer IC and the output of the IC to become high. This high output is fed to the controller that identifies line is working. If the output is low, then the controller understands the line is not working and will transmit a message through the GSM modem automatically.

**v) GSM modem**

A GSM modem is a wireless modem that works with a GSM wireless network[5]. A wireless modem behaves like a dial-up modem. The main difference between them is that a dial-up modem sends and receives data through a fixed telephone line while a wireless modem sends and receives data through radio waves. Like a GSM mobile phone, a GSM modem requires a SIM card from a wireless carrier in order to operate AT-Command set: The following section describes the AT-Command set. The commands can be tried out by connecting a GSM modem to one of the PC's COM ports. Type in the test-command, adding CR ÷ LF (Carriage return ÷ Line feed = \r\n) before executing. Table gives an overview of the implemented AT-Commands in this application. The use of the commands is described in the later sections.

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- **NO** = Normally Open, COM is connected to this when the relay coil is **on.**
- Connect to COM and NO if you want the switched circuit to be **on when the relay coil is on.**
- Connect to COM and NC if you want the switched circuit to be **on when the relay coil is off.**

## III.Block Diagram and Circuit Diagram

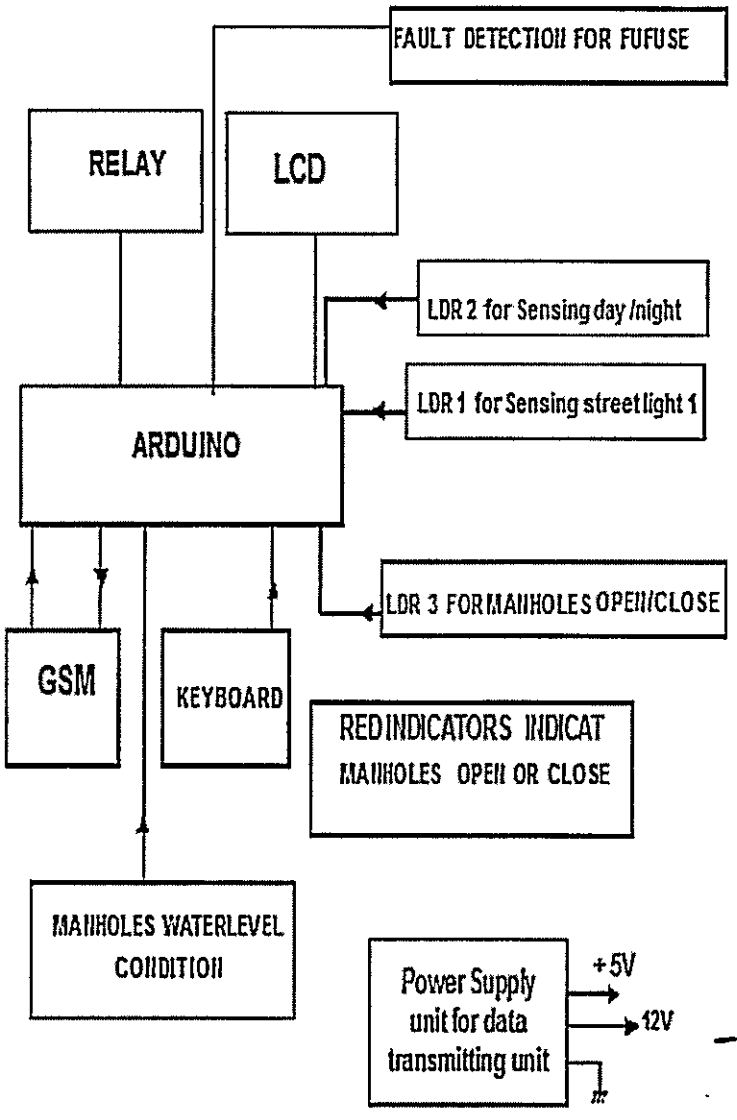


Figure 3. Block Diagram of street light control with manhole monitoring

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**Section C: Financial requirement (all figure must be INR)**

| S. No | Item Head | Total (in Lakh) |
|---|---|---|
| **Capital Component** | | |
| 1 | Permanent Equipment (Located in lab/implementing organization) as per billing | 12,000/- |
| 2 | Fabricated systems/demonstration models (located at beneficiary location) | 40,000/- |
| A | Subtotal (Capital Items) | 52,000/- |
| **General Component** | | |
| 1 | Manpower and Contingencies | 30,000/- |
| 2 | Consumables | 15,000/- |
| 3 | Travel | 3,000/- |
| 4 | Overhead | -------- |
| 5 | PC | --------- |
| 6 | Printer and Scanner | 5,000/- |
| **B** | Subtotal (General) | 53,000/- |
| C | **Total cost of the project (A+B)** | 105000/- |

I. **Project Cost:1,05,000/-**
II. **Contribution of consortium (if any):**
III. **Total Budget (I+II):1,05,000/-**

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**Section D: Applicant Details**

| | | |
|---|---|---|
| Name of the Lead Organization | Avanthi Institute of Engineering and Technology | |
| Address, Please include phone numbers, fax, emails and website | Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.<br>email: principal.avanthi@gmail.com<br>Ph No:9849714307<br>www.aietg.ac.in | |
| Applicant Type Broad: Government/Non-Government Sub entity: Academic or research institution | ACADEMIC INSTITUTION | |
| Primary Point of Contact Lead Principal investigator (PI) | Name: | Dr S Kishore Reddy |
| | Designation | Associate Professor |
| | Email | Avanthiece2005@gmail.com |
| | Telephone | 9849714307 |
| | Mobile | 9490407807 |
| Secondary Point of Contact | Name: | Dr Ramachandra Reddy |
| | Designation | Associate Professor |
| | Email | principal.avanthi@gmail.com |
| | Telephone | 9849714307 |
| | Mobile | 9849714234 |

| **Information on Lead PI** | **Expertise available with the Principal Investigator** |
|---|---|
| | **Dr S Kishore Reddy,** Associate Professor Dept. Of Electronics and Communication Engineering., he would mentor the proposed research project from time to time.<br>The Principal Investigator has gained good knowledge on Embedded systems design and its related areas.<br>1.Guided Ten M.Tech project students based on his research area.<br>Guided Five B. Tech project students out of his research area.<br>2) During his research, PI has acquired knowledge of many simulations software& used them for the above said project works.<br>The tools learned by PI are as follows:<br>Computational skills:<br>Simulation Software: Embedded C & Embedded RTOS<br>Word Processing: MS Office |

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## 1.Annexure 1:Monitoring & Evaluation approach

| Time Schedule of Activities Giving milestones through BAR Diagram | | | | | |
|---|---|---|---|---|---|
| **S.No** | **WORKPLAN** | **1ST Month** | **2nd Month** | **3rd Month** | **4th Month** |
| 1 | Basic Study of the literature related for the project implementation consolidation of the available expertise. Planning of execution of the proposed project scheme | | | | |
| 2 | Procurement of experimental equipment and installation | | | | |
| 3 | Design of basic simulation of the project and control strategy usingEmbedded C & Embedded RTOS | | | | |
| 4 | Implementation of research project and operational control of the test facility using Embedded C & Embedded RTOS | | | | |
| 5 | Annual review of the progress of the project and effective guidance for implementation | | | | |
| 6 | Commissioning of the project hardware | | | | |
| 7 | Testing of the project and code | | | | |
| 8 | Experimental validation of the project | | | | |
| 9 | Report Writing | | | | |

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**Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad**

| S No | Infrastructure Facility | Yes/No/Not required/Full or Sharing Bases |
|---|---|---|
| 1 | Workshop Facility | Yes |
| 2 | Water & Electricity | Yes |
| 3 | Laboratory Space/Furniture | Yes |
| 4 | Power Generator | Yes |
| 5 | AC Room or AC | Yes |
| 6 | Telecommunication including e-mail &fax | Yes |
| 7 | Transportation | Yes |
| 8 | Administrative/ Secretarial support | Yes |
| 9 | Information facilities like Internet Library | Yes |
| 10 | Computational facilities | Yes |
| 11 | Animal/Glass House | Not required |
| 12 | Any other special facility being provided | Dedicated Embedded C Lab |

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Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

AVIH/2022/ECEPROJECT/01 Dt: 15.08.2022

TO
The Manager,
CONSCIENCE TECHNOLOGIES,
Hyderabad.

**Sub:**Details of Project coordinator of Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting.

Respected Sir,

We are pleased to appoint faculty for coordination of Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting. We are happy to submit detailed proposal along with the milestones of Embedded Automation Design and Prototype.

Details of the Faculty:

Dr.S. Kishore Reddy, AssociateProfessor
Department of ECE
Phone Number: 9573998642

Thank you and looking forward for your collaboration.

Principal Investigator

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Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**CONSCIENCE TECHNOLOGIES**

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Date: 10.08.2022,

To,

The Principal,

Avanthi Institute of Engineering and Technology,

Gunthapally, Hyderabad.

Subject: Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting- Regarding

With reference to communication along with detailed submission of project milestones. We are pleased to invite for an internal discussion on execution of the project and other design and implementation regarding development of Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting. We are deputing Engineer for the above state of project.

Details of the Engineer:
Mr.M.Manohar babu
Phone Number: 9505379414
Thank you and looking forward for your response.
Regards,
Managing Partner, Conscience Technology

Conscience Technologies DSNR, Hyd-50

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Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

#17-83/2C, 3rd Floor, Opp:Bank of Maharashtra,
Annapurna Function Hall Line, Dilsukhnagar, Hyderabad-500060 Email: info@consciencetechnologies.com
PH: 040 60 12 11 99

**CONSCIENCE TECHNOLOGIES**

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WORK ORDER

Date: 20/10/2022,

HYDERABAD,

To
The Principal,
Avanthi Institute of Engineering& Technology,
Gunthapally, Abdullapurmet Mandal, Hyderabad.

**Sub**: Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting

Further to your offer for preparing of Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting Portal/Control for face recognition as per the Telephone Discussion quotation, we are pleased to place the work order as below

| S.NO | Description | Quantity in no | Unit Cost Rs. | Total Cost in Rs. |
|---|---|---|---|---|
| 1 | Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting | 1 | 1,05,000 | 1,05,000 |

Work Oder Valid: One Year (20th October 2022 to 20th October 2023)

Terms& Conditions:

- Preparation of detailed drawings/Lay outs based on the reference design provided by the customer.
- Taking physical design for review and approval of our customer
- Submission of designs/lay outs for review and approval of our customer
- Incorporate any comments/feed back given by customer in the design/layouts
- Preparation of designs, lay outs, algorithms, part design, bill of materials for all designs.
- Preparation of built up designs, lay outs after completion of fabrication/Installation at site.

For CONSCIENCE TECHNOLOGIES

MANAGER

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

#17-83/2C, 3rd Floor, Opp:Bank of Maharashtra,
Annapurna Function Hall Line, Dilsukhnagar, Hyderabad-500060 Email: info@consciencetechnologies.com
www.consciencetechnologies.com PH: 040 60 12 11 99

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www.aietg.ac.in email: principal.avanthi@gmail.com

Hyderabad,
Date: 03.03.2023,

From
The Principal,
Avanthi Institute of Engineering and Technology,
Hyderabad.

To
The Manager,
CONSCIENCE TECHNOLOGIES,
Hyderabad.

Respected Sir,

Sub: Project Completion-reg.

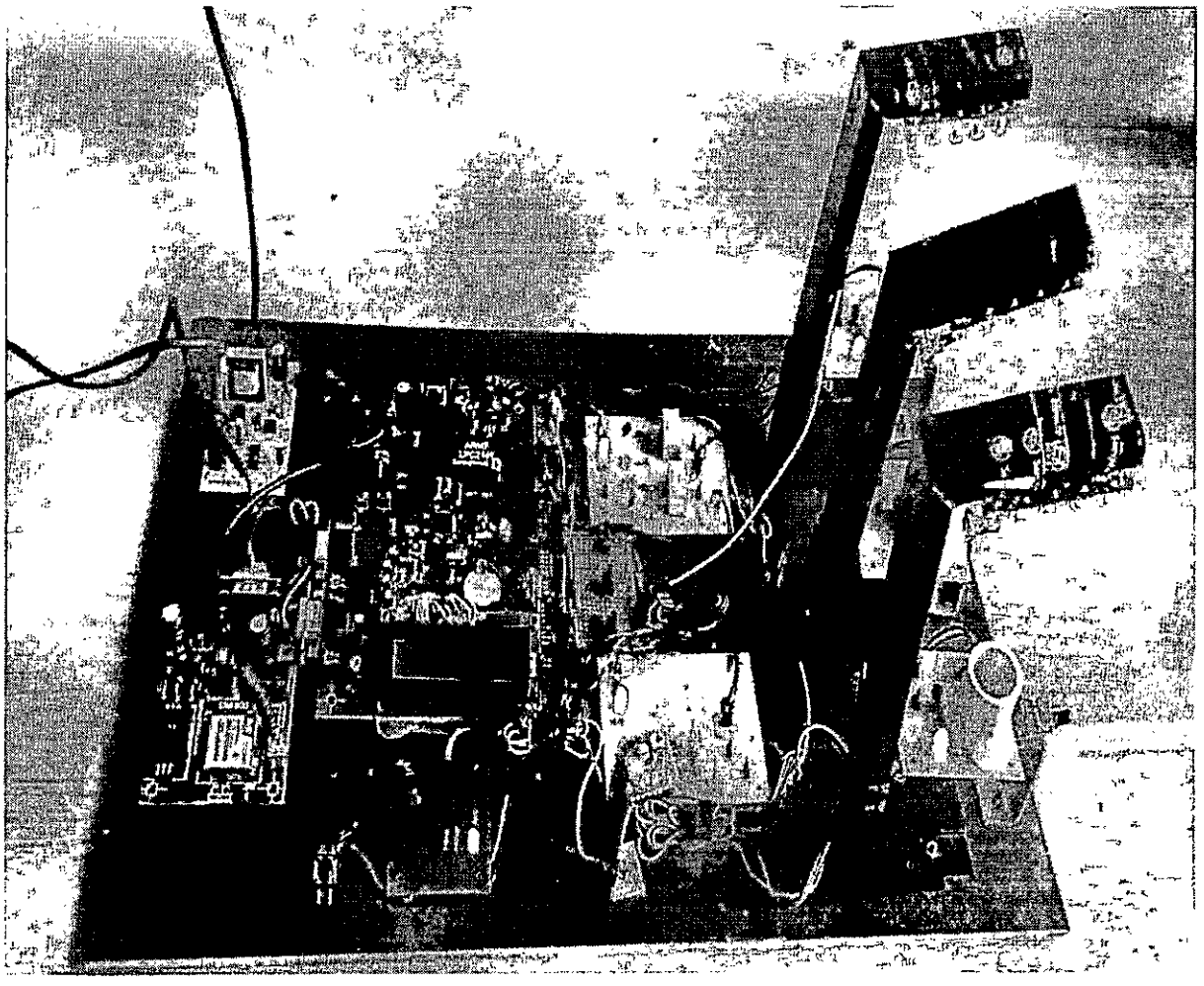
The project has been completed on a given time bond. It has been a great achievement by us to complete the prestigious project on time. It has been a great privilege, working in association with you and looking forward to working with you in future projects. We request you to please come along with your team for collecting, retrieving of important and confidential data.

Looking forward to a quick response from your side

Thanking you,

PRINCIPAL
Principal
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting



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Avanthi Institute of Engg. & Tech
Gunthepally (V), Abdullapurmet (Mdl), R.R. Dist.

SHELLX
Software Solutions Pvt. Ltd.

Date: 15/09/2022,

To

The principal,

Avanthi Institute of Engineering and Technology,

Gunthapally (V), Abdullapurmet (M), Hyderabad, Telangana.

**Sub**: Consultancy of R &D work

Dear Sir,

SHELLX Software solutions Pvt Ltd deals with **Automated Attendance System Using Face Recognition with Raspberry Pi**. Therefore, the company is interested for long lasting technical collaborations, with organizations and institutions for generating awareness and promoting technologies, through R & D and/or consultancy.

In this process, we need the assistance from your faculty experts for our industry in the form of consultancy work. Please extend your Technical Expertise accordingly.

Waiting for your reply.

SHELLX SOFTWARE SOLUTIONS PVT. LTD. HYDERABAD

Managing Director

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

17-82/1, Sri Nagar Colony, Road No. 3,
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GSTIN : 36ABJCS4679Q1Z8

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# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com


Dr.G. Ramachandra Reddy, M.Tech, Ph.D
Principal

AVIH/2022/R & D PROJECT

Dt: 22.09.2022,

TO
The Manager,
SHELLX Software solutions Pvt Ltd,
Dilsukhnagar, Hyderabad.

**Sub:** Automated Attendance System Using Face Recognition With Raspberry Pi.

Respected Sir,

With reference to letter received from your end regarding **Automated Attendance System Using Face Recognition with Raspberry Pi.** We are happy to submit detailed proposal along with the milestones of Design and hardware Implementation of Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting. We request you to discuss with your internal R&D team and communicate for further discussion. Thank you and looking forward for your collaboration.

Principal Investigator

PRINCIPAL
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Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Section A: General Information:**

| | |
|---|---|
| **Project Title** | Automated Attendance System Using Face Recognition With Raspberry Pi |
| Project Type<br>Research Design & Demonstration of Automated Street Light Controller Research<br>Other | Automated Attendance System Using Face Recognition With Raspberry Pi |
| Project Location/s<br>(District State)(Must be in India) | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Stage of development<br>(initial concept proof of demonstration/scale up) | Proof of Concept - Demonstration |
| Lead Implementing Organization | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Any Partnering:<br>Organization:<br>In INDIA | NO |
| (1) Total Funding Request(INR In lakh) | 3,45,000 Rs/- |
| (II) Contribution in Cash/kind from lead/partnering institution if any | NO |
| Total cost (I+II)= | 3,45,000 Rs/- |

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# AUTOMATED ATTENDENCE SYSTEM USING FACE RECOGNITION WITH RASPBERRY PI PROJECT PROPOSAL

**Abstract** In the present situation, student participation in the classroom is very much important for better learning and increased success rates. A major issue in the classroom is the time-consuming attendance process which leads to a lack of interest in the lecture for both teacher and the students. Providing accurate attendance management systems for real-time applications is challenging. It is a very challenging and time-consuming process for a teacher to mark the attendance of a whole class. In recent years, many facial recognition-based attendance systems have been proposed, but they all have their abilities and drawbacks. Our work aims to design a robust face recognition-based attendance system using deep learning. The major steps in this work are face detection, face recognition, and the design of an android application for the end-user. Face detection is done by employing facial feature extraction and mapping. This study aims to provide an attendance solution, viz,schools, educational institutes, and hospitals.

## Introduction

Face recognition is an effective system for attendance management. This system can easily be deployed in schools, colleges, and educational institutes with low cost and easy technical support. The existing manual attendance is a tedious task and requires human effort; all these difficulties can be replaced by this facial recognition attendance system . The whole project can be divided into three major steps such as face detection, face recognition, and android application. Face detection can beachieved using a neural network; by facial recognition, each face is mapped to a 128-byte array of facial features.

A local database of the students and their facial features is required to detect and identify their faces. When a student comes in front of the system, the camera takes a photograph and identifies the face in it followed by the generation of a 128-byte facial features array; this array data is matched with the existing student data in the local data, and the name is retrieved. The attendance status of the person is then sent to the cloud, and mail is sent to the student regarding his attendance for that day. The student can also monitor his attendance record in the android application . From this system, the enrollment of new students is also possible. When a new student enrols, his name, email address, and photo are all stored in the cloud, they also receives an email with their application credentials.

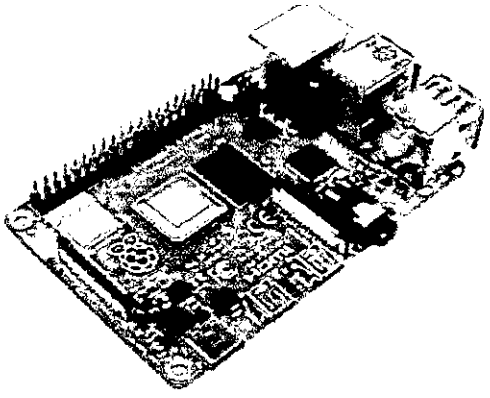
The proposed system is developed using Raspberry Pi, a Pi camera, and a 16 × 2 LCD. The LCD shows the attendance status in real time. For the cloud storage, Google Sheets are used, and an

android application for the end-user is developed using MIT app inventor. Some of the later works, in this student will be mapped to the course at the start. Using Haar classifier, required part of the face will be captured and stored in its database. The frontend part is designed using a Tkinter library in a low-cost approach and later used that database to mark the attendance [4]. Their algorithm extracts the features of the face and stores them in the database, which later uses a machine learning algorithm to recognize the face which is known as a classifier. Attendance will be marked apparently [5]. In this paper, at first, the trainer captures a short video of the class and stores it. From this short video, they have to recognize faces that are pre-stored with them. Unlike this, our system has a better approach toward this, our code cuts the video capture of students into 25% of it and our process continues, and this saves our time. Our system has better time complexity. Sreesuba et al.uses multi-task cascaded neural network to detect the faces of the students and implements Face Net algorithm to recognize the faces. The attendance report is shared with the respective trainers through email

**Hardware Description**

**Raspberry Pi 4B Board**

Around the world, people use the Raspberry Pi to learn programming skills, build hardware projects, perform home automation, implement Cabernets clusters and edge computing, and even use it in industrial applications; the Raspberry Pi is a very cheap computer running Linux, but it also offers a set of GPIOs. Raspberry Pi 4 has three different versions 1, 2, or 4 GB of ram; it uses a USB-C power supply, unlike its predecessor. Compared to its predecessor, it has altered positions of USB ports. It has the same form factor compared to the before model. Raspberry Pi 4B is based on a Broadcom BCM 2711 system on a chip with a 64bit quad core arm cortex A72 CPU running at 1.5GHZ; it has some good wireless connectivity. It got a dual-band 802 1-1 BG and an AC WIFI and Bluetooth 5.0, and first time on the raspberry Pi, we have Gigabit Ethernet and 2 USB 2.0 PORTS AND 2 USB 3.0 PORTS. It has dual 4 k MICRO-HDMI sockets, and it can support 4 k video up to 60 frames/sec. It has 40 GPIO pin connectors. It has a micro-SD card slot [9] (Fig. 1).



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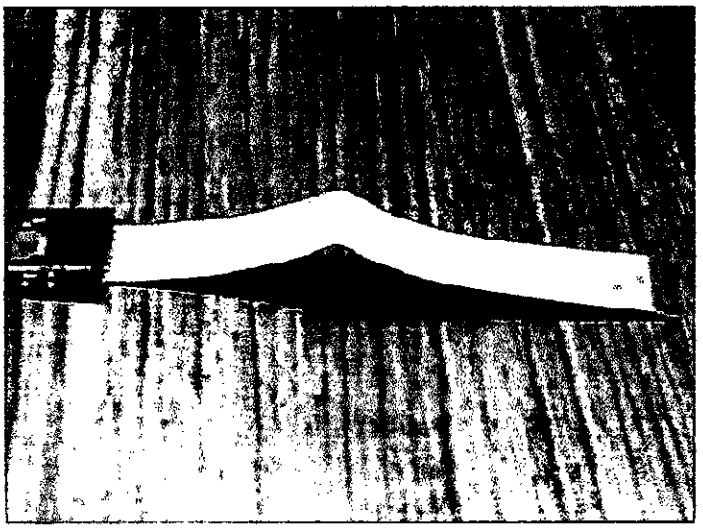
*Pi Camera*

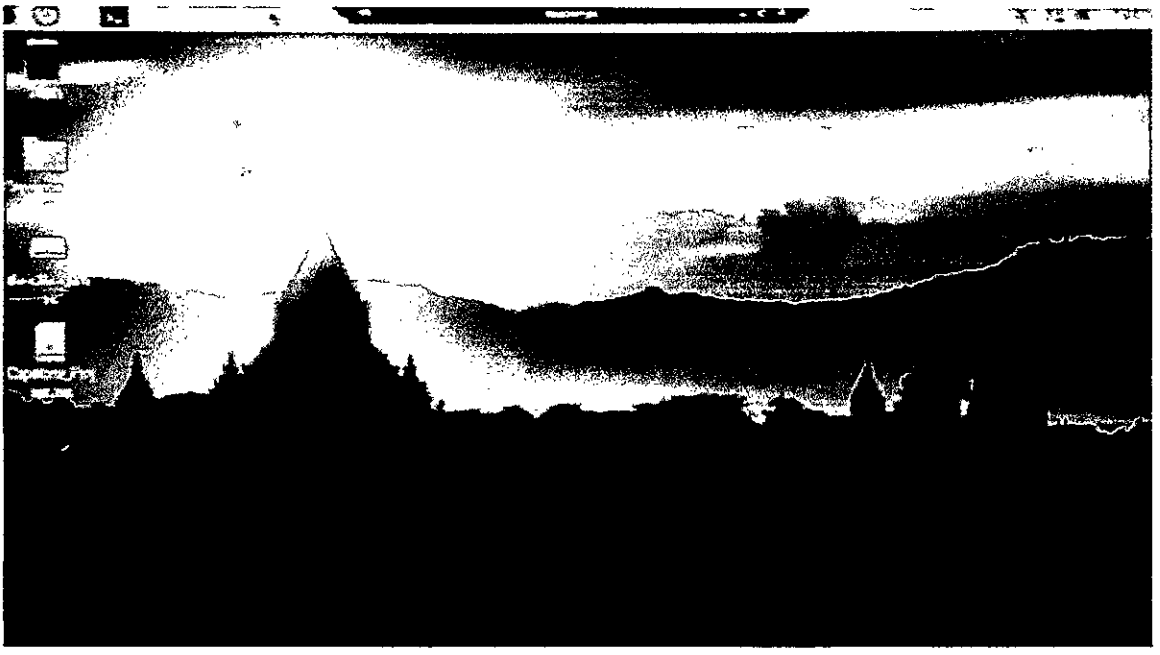
The Pi camera plays an important role to capture video and detecting face; in Picamera, there is a little CMOS camera sensor, and in terms of connectivity, it has a flat ribbon CSI cable where one end of the CSI cable has a piece of blue plastic, and other have some traces on it as shown in Fig. 2; and this traces is line up with
the traces on the Raspberry Pi board zip 15 CSI connector. When we are using the Pi camera module, we have to enable the camera interface on a Raspberry Pi so if we run the command (sudo-raspi config), it gives us the advanced options; there we have to select the interface and then we have to enable the camera, and for capturing
video, we have to use a command.



**Software Description**

*Raspbian OS*

Raspbian OS is an open operating method based onDebian optimized for Raspberry Pi, a collection of fundamental apps and utilities for running Raspberry Pi. Raspbian, on the other hand, offers even more features than a pure operating system: Over 35,000 packages are included. Software has been precompiled and packaged onveniently. Raspberry Pi is simple to set up. It provides some available deb software communication, compiled software bundle. Two minimum size of GBS card is required, but a 4 GB SD card or higher is required recommendation



**Experimental Implementation**

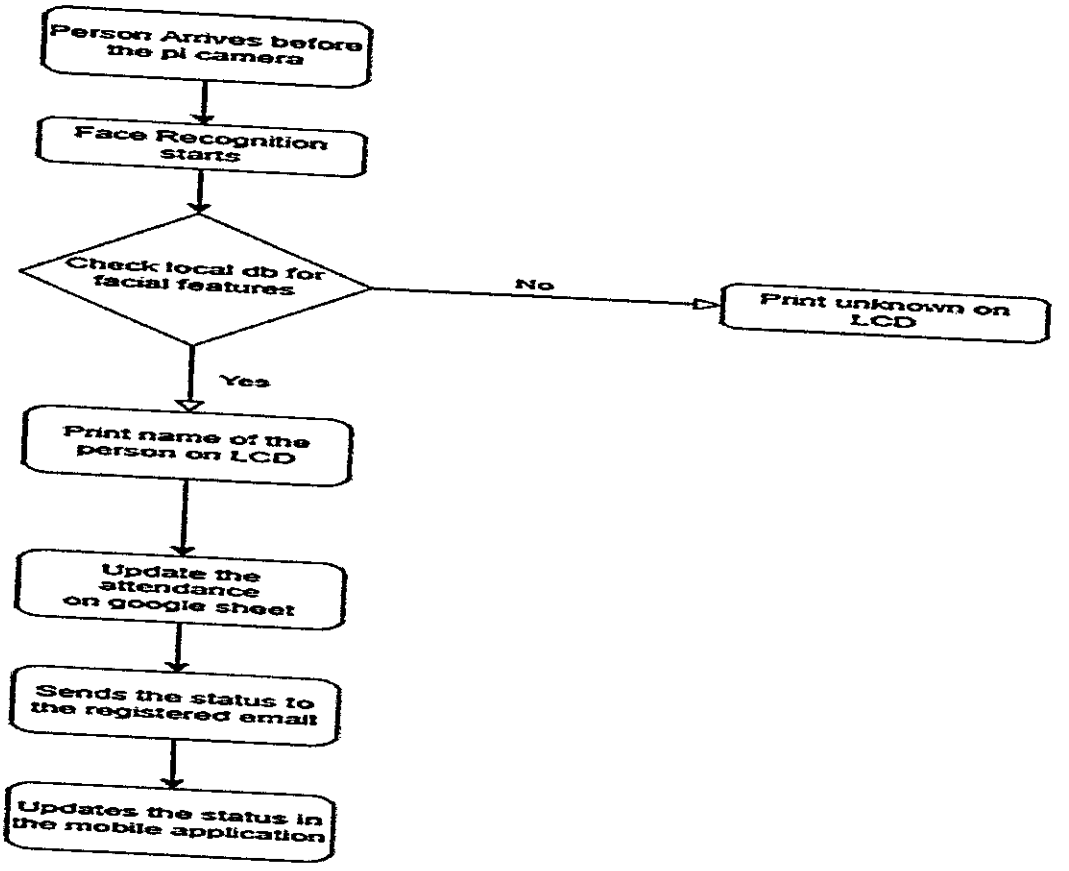
***Capturing of Face Image***

Our whole face recognition is done by a Pi camera which is connected to the Raspberry Pi, and for running the code, we have written the code in Python using the OpenCV library by using the command cv2.capture. This camera just records videos and divides it into frames. If we allow capturing the time, complexity will increase. So, we decided to cut short the frames to one-fourth of the original amount. This camera records any image in BGR format; we have written the code to change this format to RGB format.

***Face Detection***

Face detection consists of two processes, one is locating the face in the picture and the next is facial feature extraction using the dliblibrary through a method called Histogram of Oriented Gradients (HOG). The process inside face detection is that the image will be turned into black and white as we do not need color to detect a face. Then the algorithm looks at every single pixel, and we compare the darkness of each with its surrounding pixels; and the arrow is drawn in the direction of increasing brightness, and this arrow is called gradient. If we allow measuring whole pixels, we need to come up with many gradients; it is like we have lost the forest fortress, so we divided the whole image into 16 × 16 square box pixels and then we count how many gradients in up, down, upright, left, etc. and we choose the gradient direction which highest number of gradients in it. So finally, we get hog pattern of face. This is how the face gets detected in the frame.

## FLOW CHART

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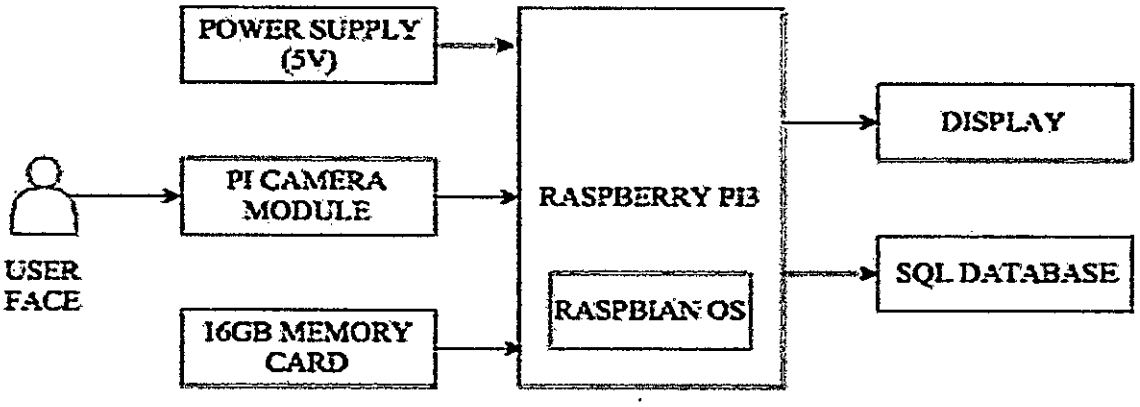
## BLOCK DIAGRAM




## GRAPHICAL USER INTERFACE (GUI)

The GUI was developed by using JFrame format present in Java that is installed in Raspberry Pi3. By using Java-SQL connector the database can be easily managed through Php My Admin. There are following functions in the database: Date, Time In, Time Out, Present/Absent, Number of Hours as shown in.

## CONCLUSION

Face recognition attendance systems can thus be proved to be secure and efficient. In real time scenarios, the Haar Cascade Classifiers outperforms other algorithmsand found to be suitable for implementation of this work. It gives a better recognition rate with a low false rate. Using Raspberry Pi independently improves the mobility of the work and it acts as standalone hardware. The work can be further developed by improving recognition rate [11] and by using Raspberry Pi Infra-Red camera module this system can be used as a security surveillance system

**Section C: Financial requirement (all figure must be INR)**

| S. No | Item Head | Total (in Lakh) |
|---|---|---|
| **Capital Component** | | |
| 1 | Permanent Equipment (Located in lab/implementing organization) as per billing | 60,000/- |
| 2 | Fabricated systems/demonstration models (located at beneficiary location) | 1,30,000/- |
| A | Subtotal (Capital Items) | 1,90,000/- |
| **General Component** | | |
| 1 | Manpower and Contingencies | 60,000/- |
| 2 | Consumables | 80,000/- |
| 3 | Travel | 10,000/- |
| 4 | Overhead | -------- |
| 5 | PC | --------- |
| 6 | Printer and Scanner | 5,000/- |
| B | Subtotal (General) | 1,55,000/- |
| **C** | **Total cost of the project (A+B)** | 3,45,000/- |

**I. Project Cost:3,45,000/-**
**II. Contribution of consortium (if any):**
**III. Total Budget (I+II):3,45,000/-**

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**Section D: Applicant Details**

| | | |
|---|---|---|
| Name of the Lead Organization | Avanthi Institute of Engineering and Technology | |
| Address, Please include phone numbers, fax, emails and website | Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.<br>email: principal.avanthi@gmail.com<br>Ph No:9849714307<br>www.aietg.ac.in | |
| Applicant Type Broad: Government/Non-Government Sub entity: Academic or research institution | ACADEMIC INSTITUTION | |
| Primary Point of Contact Lead Principal investigator (PI) | Name: | Dr. B.Siddartha |
| | Designation | Associate Professor |
| | Email | Avanthiece2005@gmail.com |
| | Telephone | 9849714307 |
| | Mobile | 9490407807 |
| Secondary Point of Contact | Name: | Dr Ramachandra Reddy |
| | Designation | Associate Professor |
| | Email | principal.avanthi@gmail.com |
| | Telephone | 9849714307 |
| | Mobile | 9849714234 |

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| Information on Lead PI | Expertise available with the Principal Investigator |
|---|---|
| | Dr. B.Siddartha, Associate Professor Dept. Of Electronics and Communication Engineering., he would mentor the proposed research project from time to time.<br>The Principal Investigator has gained good knowledge on Embedded systems design & Image Processing And Its Related Areas.<br>1.Guided four M.Tech project students based on his research area.<br>Guided two B. Tech project students out of his research area.<br>2) During his research, PI has acquired knowledge of many simulations software& used them for the above said project works.<br>The tools learned by PI are as follows:<br>Computational skills:<br>Simulation Software: Embedded C & Embedded RTOS & MAT LAB IMAGE PROCESSING TOOL BOXES<br>Word Processing: MS Office |

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## 1. Annexure 1:Monitoring & Evaluation approach

| Time Schedule of Activities Giving milestones through BAR Diagram | | | | | | |
|---|---|---|---|---|---|---|
| **S.No** | **WORKPLAN** | **1ST Month** | **2nd Month** | **3rd Month** | **4th Month** | **5th Month** |
| 1 | Basic Study of the literature related for the project implementation consolidation of the available expertise. Planning of execution of the proposed project scheme | | | | | |
| 2 | Procurement of experimental equipment and installation | | | | | |
| 3 | Design of basic simulation of the project and control strategy using Embedded C & Embedded RTOS | | | | | |
| 4 | Implementation of research project and operational control of the test facility using Embedded C & Embedded RTOS | | | | | |
| 5 | Annual review of the progress of the project and effective guidance for implementation | | | | | |
| 6 | Commissioning of the project hardware | | | | | |
| 7 | Testing of the project and code | | | | | |
| 8 | Experimental validation of the project | | | | | |
| 9 | Report Writing | | | | | |

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Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad**

| S No | Infrastructure Facility | Yes/No/Not required/Full or Sharing Bases |
|---|---|---|
| 1 | Workshop Facility | Yes |
| 2 | Water & Electricity | Yes |
| 3 | Laboratory Space/Furniture | Yes |
| 4 | Power Generator | Yes |
| 5 | AC Room or AC | Yes |
| 6 | Telecommunication including e-mail &fax | Yes |
| 7 | Transportation | Yes |
| 8 | Administrative/ Secretarial support | Yes |
| 9 | Information facilities like Internet Library | Yes |
| 10 | Computational facilities | Yes |
| 11 | Animal/Glass House | Not required |
| 12 | Any other special facility being provided | Dedicated Embedded C Lab |

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www.aietg.ac.in email: principal.avanthi@gmail.com

AVIH/2022/R&D PROJECT Dt: 27.09.2022,

TO

The Manager,

SHELLX Software solutions Pvt Ltd,

Dilsukhnagar, Hyderabad.

**Sub:** Details of Project coordinator of **Automated Attendance System Using Face Recognition with Raspberry Pi.**

Respected Sir,

We are pleased to appoint faculty for coordination of **Automated Attendance System Using Face Recognition with Raspberry Pi**. We are happy to submit detailed proposal along with the milestones of Embedded Automation Design and Prototype.

Details of the Faculty:
Dr B. Siddhartha, Associate Professor
Department of ECE
Phone Number: 9701228648
Thank you and looking forward for your collaboration.

Principal Investigator

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

SHELLX
Software Solutions Pvt. Ltd.

Date: 30.09.2022,

To,

The Principal,

Avanthi Institute of Engineering and Technology,

Gunthapally, Hyderabad.

Subject: **Automated Attendance System Using Face Recognition with Raspberry Pi**- Regarding

With reference to communication along with detailed submission of project milestones. We are pleased to invite for an internal discussion on execution of the project and other design and implementation regarding development of Automated Attendance System Using Face Recognition with Raspberry Pi. We are deputing Engineer for the above state of project.

Details of the Engineer:
Vishnu Vardhan
Phone Number: 9848705624

Thank you and looking forward for your response.

Regards

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

17-82/1, Sri Nagar Colony, Road No. 3,
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info@shellx.in
www.shellx.in

SHELLX
Software Solutions Pvt. Ltd.

WORK ORDER

Date: 20/10/2022,

HYDERABAD,

To
The Principal,
Avanthi Institute of Engineering& Technology,
Gunthapally, Abdullapurmet Mandal, Hyderabad.

**Sub**: Automated Attendance System Using Face Recognition with Raspberry Pi

Further to your offer for preparing of Portal/Control for face recognition as per the Telephone Discussion quotation, we are pleased to place the work order as below

| S.NO | Description | Quantity in no | Unit Cost Rs. | Total Cost in Rs. |
|---|---|---|---|---|
| 1 | Automated Attendance System Using Face Recognition With Raspberry Pi | 10 | 34,500 | 3,45,000 |

Work Oder Valid: One Year (20th October 2022 to 20th October 2023)

Terms& Conditions:

- Preparation of detailed drawings/Lay outs based on the reference design provided by the customer.
- Taking physical design for review and approval of our customer
- Submission of designs/lay outs for review and approval of our customer
- Incorporate any comments/feed back given by customer in the design/layouts
- Preparation of designs, lay outs, algorithms, part design, bill of materials for all designs.
- Preparation of built up designs, lay outs after completion of fabrication/Installation at site.

FOR SHELLX SOFTWARE SOLUTIONS

MANAGER

SHELLX SOFTWARE SOLUTIONS PVT. LTD. HYDERABAD

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NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

Hyderabad,

Date: 03.03.2023,

From
The Principal,
Avanthi Institute of Engineering and Technology,
Hyderabad.

To
The Manager,
SHELLX Software solutions Pvt Ltd,
Hyderabad.

Respected Sir,

Sub: Project Completion-reg.

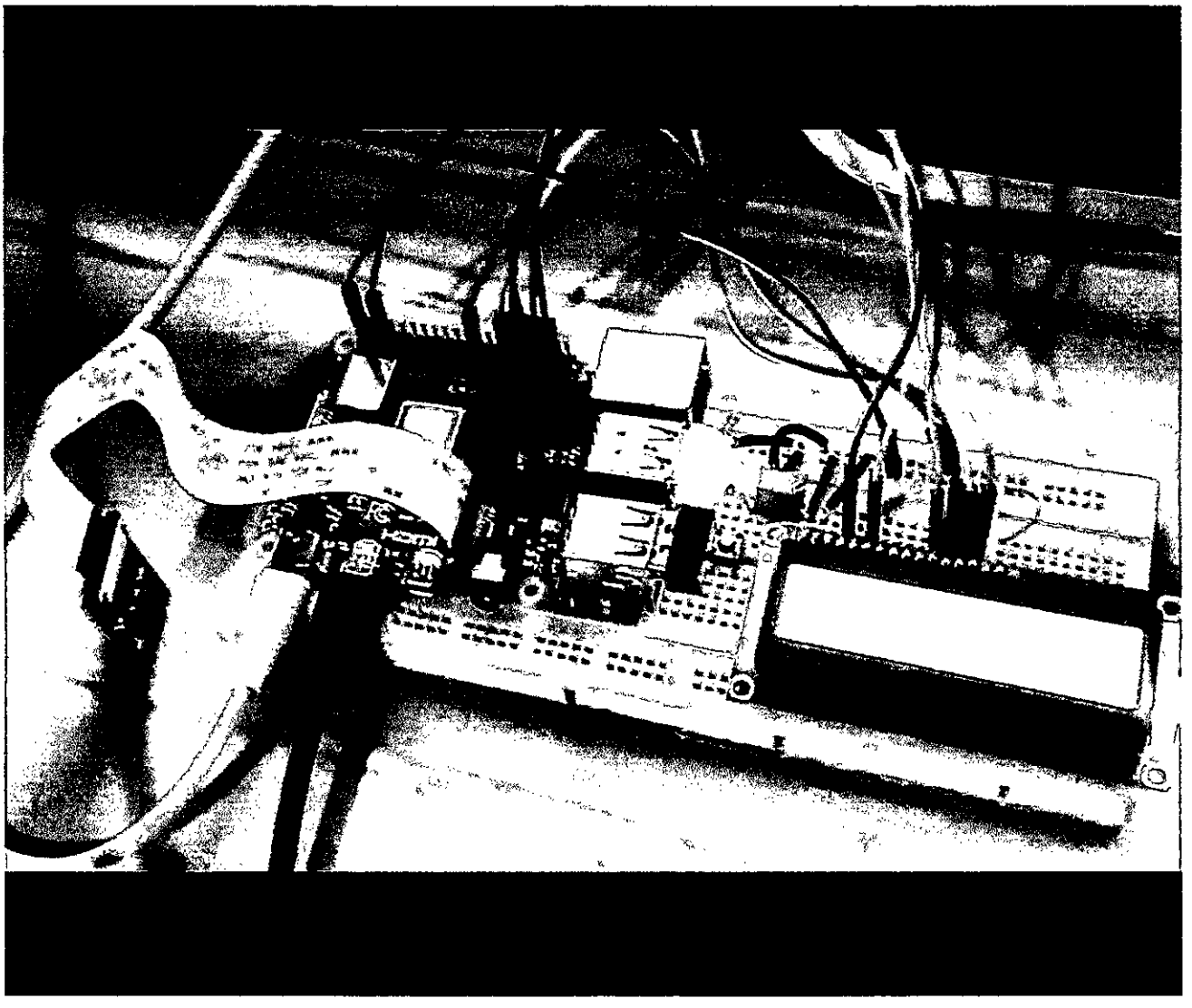
The project has been completed on a given time bond. It has been a great achievement by us to complete the prestigious project on time. It has been a great privilege, working in association with you and looking forward to working with you in future projects. We request you to please come along with your team for collecting, retrieving of important and confidential data.

Looking forward to a quick response from your side

Thanking you,

PRINCIPAL
Principal
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**AUTOMATED ATTENDENCE SYSTEM USING FACE RECOGNITION WITH RASPBERRY PI**



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Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

MANAC
Infotech (P) Limited

Date: 21/08/2022,

To

The principal,

Avanthi Institute of Engineering and Technology,

Gunthapally (V), Abdullapurmet (M), Hyderabad, Telangana.

**Sub**: Consultancy of R &D work

Dear Sir,

**Attention:** Dr. Hameeda shaik, Associate Professor of Department of CSE.

MANA Infotech (P) Limited deals with **Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators.** Therefore, the company is interested for long lasting technical collaborations, with organizations and institutions for generating awareness and promoting technologies, through R & D and/or consultancy.

In this process, we need the assistance from your faculty experts for our industry in the form of consultancy work. Please extend your Technical Expertise accordingly.

Waiting for your reply.

MANAC INFOTECH PVT. LTD. HYD.

Managing Director

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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www.aietg.ac.in email: principal.avanthi@gmail.com


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Dr.G. Ramachandra Reddy, M.Tech, Ph.D
Principal


AVIH/2022/R & D PROJECT

Dt: 25.08.2022,

TO
The Manager,
MANA Infotech (P) Limited,
Dilsukhnagar, Hyderabad.

**Sub:** Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators

Respected Sir,

With reference to letter received from your end regarding **Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators,** We are happy to submit detailed proposal along with the milestones of Design and hardware Implementation of Automated Street Light Controller and Manhole Monitoring with Fault Detection & Reporting. We request you to discuss with your internal R&D team and communicate for further discussion.

Thank you and looking forward for your collaboration.

Principal Investigator

PRINCIPAL
PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Section A: General Information:**

| | |
|---|---|
| **Project Title** | Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators |
| Project Type<br>Research Design & Demonstration of Automated Street Light Controller Research<br>Other | Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators |
| Project Location/s<br>(District State)(Must be in India) | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Stage of development<br>(initial concept proof of demonstration/scale up) | Proof of Concept - Demonstration |
| Lead Implementing Organization | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Any Partnering:<br>Organization:<br>In INDIA | NO |
| (1) Total Funding Request(INR In lakh) | 2,15,000 Rs/- |
| (II) Contribution in Cash/kind from lead/partnering institution if any | NO |
| Total cost (I+II)= | 2,15,000 Rs/- |

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Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

# TOWARD BETTER STATISTICAL VALIDATION OF MACHINE LEARNING-BASED MULTIMEDIA QUALITY ESTIMATORS PROJECT PROPOSAL

Abstract—Industries use various platforms to receive feedback from users of their products. In this paper, there is an overview of the potentials of using natural language processing system (NLP) in classifying the quality of user experience. The user experience is captured using google form. To test the efficacy of the platform, sentiments of users were analysed using hotels.ng as the source of data. The natural processing of electronic word of mouth (e-WOM) can be applied to any feedback platforms to classify and predict customers' sentiments and provide a veritable opportunity for companies to capture the quality of users' experiences and improve service delivery. The feature or sentiments extraction was done using opinion mining and data cleaning tools on heterogeneous data sources to judge the decision-making process of users. Using charts and correlations, with an average performance level of the willingness to recommend and degree of review helpfulness, the platform showed that the Quality of User Experience (QoUE) of the customers are 7.31 and 7.03 respectively. Finally, an improved logistic regression classifier was developed to test, train and classify the user experiences. Comparing the improved logistic regression classifier with standard logistic regression classifier shows that the training accuracy of the proposed improved logistic regression gave 97.67% as against the standard logistic regression which had accuracy of 86.01%

I. INTRODUCTION It is considered that the expected launch of 5G and growth beyond 5G (B5G), organizations are going to experience sophistication in web 2.0 and online democracy. Competition among various online shopping and booking platforms will be driven by the ability to capture, analyse and use customers' experiences to the organization's advantage. Examples of popular platforms where user experiences are captured and sentiments analysed include but not limited to Gmarket, booking.com, Trip Advisor, Facebook, hotels.ng, and such other organizations as Amazon and Google. These options available to the customer and low switching cost it affords is provided by the current trends in advancement of technology as well as the social media [1]-[3]. The primary motive for the sentiment analysis of user experience is to gain insight into how customers feel and respond to products and services. This work is intended to recommend possibilities of ensuring that the needs of customers are met, and their expectations exceeded in the future. This is considered important given that

customer satisfaction is critical to the success of all businesses. Besides quality of experience, other researchers have also used sentiment analysis, otherwise known as emotion analysis, to detect speech, mood or language pattern [2]. In another related work, authors designed a framework, which can detect hate speech on Facebook due to the need to uncover the real intentions of Facebook users [4]. Similarly, machine learning models for analysing and predicting YouTube users' experiences, especially those using smartphones have been developed recently [5]. These and many other works, demonstrated the rising interest in measurement and monitoring quality of user experiences (QoUE) in recent times [6]. However, the challenge lies in capturing accurate and complete picture of the customer experience, considering that reviews and comments are now real time, just as data increase currently requires automation and machine learning. In this paper, the effect of online reviews on customers using hotels.ng as a case study was analyzed

The contributions of this paper include:

1) An overview of the evolving role of machine learning in capturing and analyzing quality of user experience using hotel.ng website as a case study.

2) A measure of the effect of customers' reviews on new customers, analyzing positive and negative feedback.

3) A review of challenges and open issues to the design and implementation of machine learning based analysis of sentiments derived in varied contexts from online platforms. The rest of the paper is arranged as follows: in Section II, there is a brief background to three concepts - A. machine learning, B. quality of user experience and C. electronic word of mouth (e-WOM). Section III focuses on the overall system model. Section IV details the performance evaluation, while Section V concludes the paper.

## II. QUALITY OF USER EXPERIENCE AND MACHINE LEARNING

Machine Learning Machine learning has provided a veritable opportunity to monitor the moods and level of satisfaction of users of products and services in all areas such as industry, civil, military and social media. It is therefore not surprising that in a bid to receive the best services, potential customers visit the review section of the platforms, in order to make informed decisions based on the experiences and opinions of past customers B. Quality of User Experience Machine learning is applied to the modelling of quality of experience (QoE) Tech

quality of service (QoS) and quality of user experience (QoUE) in networking for instance by using a set of indicators to represent the state and perception of users over a network [8]. This enables an automatic extraction and prediction of QoE or QoUE as the case may be. The researchers here argue that there is a need to guarantee reliable prediction, guided learning rate and careful design of such machine learning platform. As shown in Fig. 1,

the features of the reviews used in this research work include:

• Review title: This is the header of the review. It is usually a short phrase or word that the guest uses to summarize his impression of the industrial product.

• Review content: This is the main area where the reviewer expresses his opinion in detail, about the industrial product.

• User rating: The rating here is a quantitative data. It has a possible value between 1-10; with 1 indicating strongly negative and 10 indicating strongly positive.

• User ID: This is the identity of the reviewer. Although the reviewers usually have the option of being anonymous, having User ID, lends the review a higher validity. To manage and organize these diverse features better, machine learning tools are now employed in online reviews. They serve as credible source of past user perception and quality of experience to guide new or prospective users.

In some cases, reviews are presented in summarized formats to make it easier for the new visitors to quickly access what has been overtly said about the brand. Through these reviews, customers have quick and easy access to an unprecedented amount of user-generated product information which helps them choose the most appropriate product, according to their idiosyncratic preferences based on other customers' experiences. The experiences and opinions of other customers can provide information about the quality and value of each product or service and hence reduce customers' risk in making choices. It also complements other forms of business to customer communication. C. e-WOM Online review, also called electronic word of mouth (e-WOM), has an impact on customer attitudes and consequently on booking or purchase intentions. The influence of online review and its effects on the profitability of companies is repeatedly discussed. In the hospitality and tourism sector for example, online reviews influence prospective hoteliers and tourists as they make booking decisions. Studies on the state of social media, shows that 70% of respondents indicated they

trust online consumer reviews. In the relevance of the knowledge of quality of user experience, as captured in online reviews was emphasised as they have been shown to be of more impact than the traditional referrals. However, of major concern is the level of correctness of online reviews since most reviewers tends to maintain an extreme positive and negative stance, based on their experiences. All the same, this does not remove the impact of e-WOM on future purchasing decisions of users. Hence, prospective users rely more on the use of numerical ratings which are easy to process.

## III. SYSTEM MODEL

A. Overall Analytics Procedure Several steps or processes are involved in predictive analysis aimed at producing a model used to predict possible outcomes of a given instance. The processes are shown in Fig. 2. Under the modelling and pattern mining, the Mean Opinion Score (MOS) model for over the top content is given as Eqn.(1) where x denotes the number of product purchase and t is the time since last purchase and g represents the memory parameter sometimes set at a typical value

B. Predictive Model Predictive models use many several techniques in

preparing data for modelling, estimation, validating, scoring data, or related mining activities which leverage data mining, statistics, modelling, machine learning, and artificial intelligence to analyze current data and to make predictions about the future. The aim here is to ascertain what has happened, as to provide the best estimation of what will happen in the future. This study shows how patterns found in historical and transactional data can be translated into algorithms and used to identify risks and opportunities for the future. When these algorithms are tested over time, especially in multiple scenarios, the model makes predictions with new data introduced into the system. Fig.3 shows the outcome of the predictive model, where the model can make predictions of the future from the information feed as input just like an expert system.

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$$\varepsilon / (\varepsilon+\beta)$$

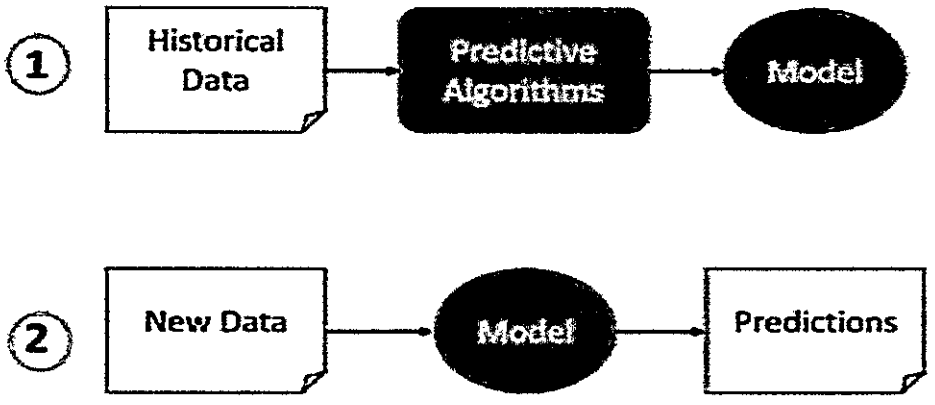


Fig. 3. Predictive model.

C. Sentiment Analysis

Sentiment analysis is the automated process of classifying online text data as positive, neutral or negative, giving businesses the opportunity to gain a deeper insight into customers' assessment of their products, brand or services. Text mining (also referred to as text analytics) is an artificial intelligence (AI) technology that uses natural language processing (NLP) in transforming the free (unstructured) text in documents and databases into normalized, structured data suitable for analysis or to drive machine learning (ML) algorithms. Arguably, NLP becomes a machine learning tool once its parameters are automatically learned from data.

This involves an automated detection of users' assessment of their products and services as they are posted in online platforms for the purpose of feedback. Such platforms could be websites of the companies, social media handles like twitter, or any booking or even online shopping platforms such as Gmarket. The essence is to identify, analyse and codify the opinions of users based on user experience and satisfaction. With the growth of web 2.0, opinions can be expressed even without the use of texts, as the use of images and emojis now dominate the social media. Thus, extracting even smiley and symbols can also be a source of feedback to companies and organizations. This development has placed the study of opinion mining and sentiment analysis on the burner of both academics and industry. Manufacturers

as well as service companies now rely on the power of machine learning for the aggregation of feedback via sentiment analysis. With this, an unstructured response could be structured into a meaningful format that provides relevant reviews to prospective users. The new format is then readily available as a means of branding, customer service support and feedback for re-work in the case of manufacturing companies who rely on feedback from users of their products to gain a competitive edge. Experts believe that customers are most likely to spend 31% more on businesses with excellent reviews [22]. From the analysis of respondents' viewpoints, about 72% said positive reviews make them trust local businesses, 72% will take action after reading positive reviews and 86% will hesitate to purchase from a business with negative online review. With the conclusions drawn from several studies, online reviews have become an important conversation for hospitality and tourism industry. This is so because people who require quality comfort and relaxation service can only learn about them through the said online platforms.

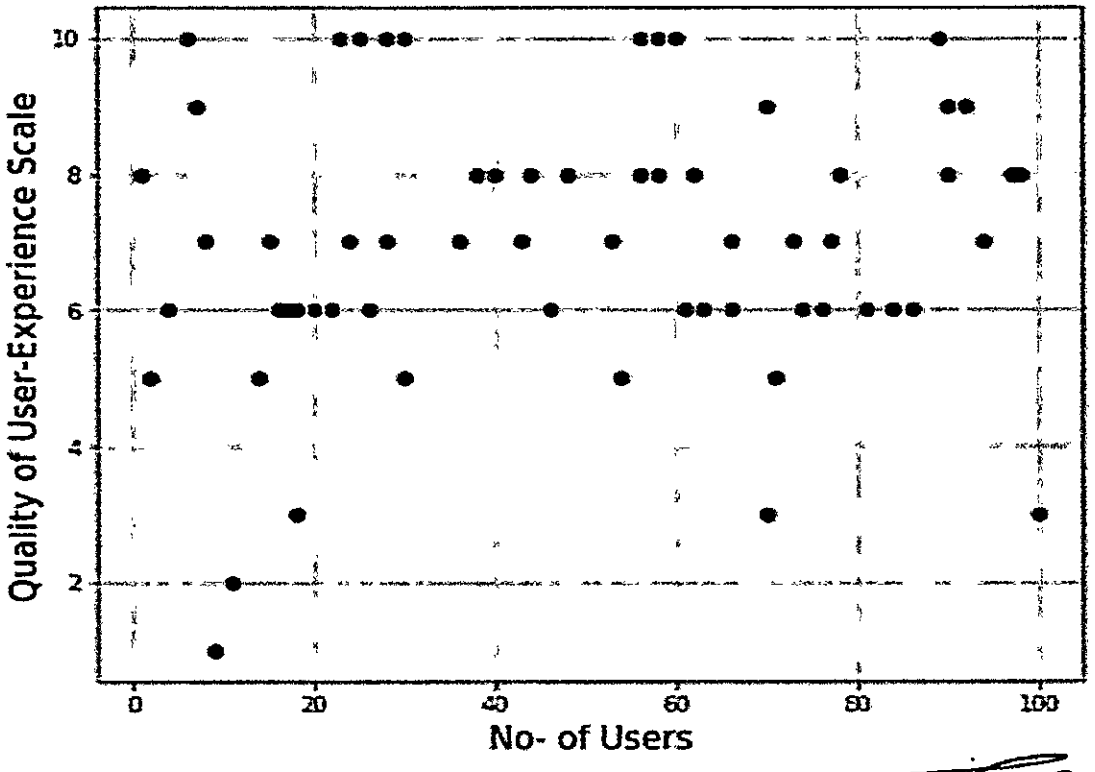


Fig. 4. Spread of sentiments of 3000 users.



D. Research Design

In this study, hotels.ng was used as the main platform to aggregate the comments. Hotels.ng was selected due to data availability to the authors. The platform is just like any other

booking platform and as a ready source of online reviews, it is very relevant to this research. A questionnaire was developed for primary data collection and web scrapping was used to extract reviews for sentiment classification. The questionnaire bubble rating is shown as a 10-point scale and a decision rule was formulated to guide the grading of each rate: 1= "Extremely Terrible", 2= "Moderately Terrible", 3= "Terrible", 4= "Poor", 5 = "Moderate", 6 = "Good", 7= "Very Good", 8= "Super Good", 9= "Nearly Excellent" and 10= "Excellent". While the sentiment classification was graded into negative weighted, neutral weighted and positive weighted. Hypotheses were formulated to examine the relationship between features of a hotel and its importance to hotel users, online reviews and its impact on the brand. The spread of sentiments captured from three thousand respondents is shown in Fig. 4. The dataset was collected using web crawling technique to extract data from Hotels.ng website. Web crawling involves implementing a software to surf the internet with the sole aim of mining relevant data or opinion [23]. This paper used a Java library called "Jsoup" to collect user reviews from hotels.ng. One challenge facing the use of Web scraping is privacy. In order to ensure that the privacy of their customer is preserved, some websites do not permit certain kinds of data mining. Web scraping however will continue to enjoy wide range of usage despite this legal obstacle due to its role as data mining tool which is useful for feedback and prediction. A self-constructed questionnaire created with Google forms tools was used to gather data about how users make decisions on a product and how online reviews influence such decisions. The Google forms used were distributed by posting the link on WhatsApp between September 2018 and November 2018. The questionnaire was made up of seven (7) questions, with two questions being on linear scale, two (2) multiple choice questions and three (3) open questions for selection. Google form can be created by signing up to have a Google account, after which the email address can be used to access the form. The structure of the form and questions it contains will be determined by the creator. After the creation of the form, the URL can be sent out to the target respondents. The responses are then saved in the drive of the email address used in creating the form. These responses can also be exported to a spread sheet. In this paper, the spreadsheet was converted to a Comma Separated Values

**Section C: Financial requirement (all figure must be INR)**

| S. No | Item Head | Total (in Lakh) |
|---|---|---|
| **Capital Component** | | |
| 1 | Permanent Equipment (Located in lab/implementing organization) as per billing | 40,000/- |
| 2 | Fabricated systems/demonstration models (located at beneficiary location) | 70,000/- |
| A | Subtotal (Capital Items) | 1,10,000/- |
| **General Component** | | |
| 1 | Manpower and Contingencies | 40,000/- |
| 2 | Consumables | 60,000/- |
| 3 | Travel | 10,000/- |
| 4 | Overhead | ——— |
| 5 | PC | ——— |
| 6 | Printer and Scanner | 5,000/- |
| B | Subtotal (General) | 1,15,000/- |
| C | **Total cost of the project (A+B)** | 2,15,000/- |

I. **Project Cost:3,45,000/-**
II. **Contribution of consortium (if any):**
III. **Total Budget (I+II):3,45,000/-**

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Section D: Applicant Details**

| | | |
|---|---|---|
| Name of the Lead Organization | Avanthi Institute of Engineering and Technology | |
| Address, Please include phone numbers, fax, emails and website | Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.<br>email: principal.avanthi@gmail.com<br>Ph No:9849714307<br>www.aietg.ac.in | |
| Applicant Type Broad: Government/Non-Government Sub entity: Academic or research institution | ACADEMIC INSTITUTION | |
| Primary Point of Contact Lead Principal investigator (PI) | Name: | Dr.Hameeda shaik |
| | Designation | Associate Professor |
| | Email | Avanthicse2005@gmail.com |
| | Telephone | 9858789546 |
| | Mobile | 9490407807 |
| Secondary Point of Contact | Name: | Dr Ramachandra Reddy |
| | Designation | Associate Professor |
| | Email | principal.avanthi@gmail.com |
| | Telephone | 9849714307 |
| | Mobile | 9849714234 |

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| Information on Lead PI | Expertise available with the Principal Investigator |
|---|---|
| | Dr. Hameeda shaik, Associate Professor Dept. Of CSE, he would mentor the proposed research project from time to time.<br>The Principal Investigator has gained good knowledge on Embedded systems design & Image Processing And Its Related Areas.<br>1.Guided two M.Tech project students based on his research area.<br>Guided two B. Tech project students out of his research area.<br>2) During his research, PI has acquired knowledge of many simulations software& used them for the above said project works.<br>The tools learned by PI are as follows:<br>Computational skills:<br>Simulation Software: C programming & JAVA<br>Word Processing: MS Office |

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

MANAC
Infotech (P) Limited

WORK ORDER

Date: 10/09/2022,

HYDERABAD,

To
The Principal,
Avanthi Institute of Engineering& Technology,
Gunthapally, Abdullapurmet Mandal, Hyderabad.

**Sub:** Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators

Further to your offer for preparing of Portal/Control for face recognition as per the Telephone Discussion quotation, we are pleased to place the work order as below

| S.NO | Description | Quantity in no | Unit Cost Rs. | Total Cost in Rs. |
|---|---|---|---|---|
| 1 | Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators | 1 | 2,15,000 | 2,15,000 |

Work Oder Valid: One Year (20th October 2022 to 20th October 2023)

Terms& Conditions:

- Preparation of detailed drawings/Lay outs based on the reference design provided by the customer.
- Taking physical design for review and approval of our customer
- Submission of designs/lay outs for review and approval of our customer
- Incorporate any comments/feed back given by customer in the design/layouts
- Preparation of designs, lay outs, algorithms, part design, bill of materials for all designs.
- Preparation of built up designs, lay outs after completion of fabrication/Installation at site.

For MANAC Infotech (P) Limited,

MANAGER

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

## 1. Annexure 1:Monitoring & Evaluation approach

| Time Schedule of Activities Giving milestones through BAR Diagram | | | | | | |
|---|---|---|---|---|---|---|
| **S.No** | **WORKPLAN** | **1ST Month** | **2nd Month** | **3rd Month** | **4th Month** | **5th Month** |
| 1 | Basic Study of the literature related for the project implementation consolidation of the available expertise. Planning of execution of the proposed project scheme | | | | | |
| 2 | Procurement of experimental equipment and installation | | | | | |
| 3 | Design of basic simulation of the project and control strategy using Embedded C & Embedded RTOS | | | | | |
| 4 | Implementation of research project and operational control of the test facility using Embedded C & Embedded RTOS | | | | | |
| 5 | Annual review of the progress of the project and effective guidance for implementation | | | | | |
| 6 | Commissioning of the project hardware | | | | | |
| 7 | Testing of the project and code | | | | | |
| 8 | Experimental validation of the project | | | | | |
| 9 | Report Writing | | | | | |

PRINCIPAL
Vanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad**

| S No | Infrastructure Facility | Yes/No/Not required/Full or Sharing Bases |
|---|---|---|
| 1 | Workshop Facility | Yes |
| 2 | Water & Electricity | Yes |
| 3 | Laboratory Space/Furniture | Yes |
| 4 | Power Generator | Yes |
| 5 | AC Room or AC | Yes |
| 6 | Telecommunication including e-mail &fax | Yes |
| 7 | Transportation | Yes |
| 8 | Administrative/ Secretarial support | Yes |
| 9 | Information facilities like Internet Library | Yes |
| 10 | Computational facilities | Yes |
| 11 | Animal/Glass House | Not required |
| 12 | Any other special facility being provided | Dedicated Embedded C Lab |

PRINCIPAL
Avanthi Institute of Engg. & Tech.
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**
(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

AVIH/2022/R&D PROJECT Dt: 02.09.2022,

TO

The Manager,

MANA Infotech (P) Limited,

Dilsukhnagar, Hyderabad.

**Sub:** Details of Project coordinator of **Toward Better Statistical Validation of Machine Learning-Based Multimedia Quality Estimators.**

Respected Sir,

We are pleased to appoint faculty for coordination of **Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators,** We are happy to submit detailed proposal along with the milestones of Embedded Automation Design and Prototype.

Details of the Faculty:

Dr.Hameeda shaik, Associate Professor

Department of CSE

Phone Number: 8697025298

Thank you and looking forward for your collaboration.

Principal Investigator

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

MANAC
Infotech (P) Limited

Date: 07.09.2022,

To,

The Principal,

Avanthi Institute of Engineering and Technology,

Gunthapally, Hyderabad.

Subject: **Toward Better Statistical Validation of Machine Learning-Based Multimedia Quality Estimators** - Regarding

With reference to communication along with detailed submission of project milestones. We are pleased to invite for an internal discussion on execution of the project and other design and implementation regarding development of Toward Better Statistical Validation Of Machine Learning-Based Multimedia Quality Estimators. We are deputing Engineer for the above state of project.

Details of the Engineer:

Mr.Sk Saleem

Phone Number: 8576902121

Thank you and looking forward for your response.

Regards

PRINCIPAL
Avanthi Institute of Engg. & Tech.
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**
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NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

Hyderabad,

Date: 31.03.2023,

From
The Principal,
Avanthi Institute of Engineering and Technology,
Hyderabad.

To
The Manager,
MANA Infotech (P) Limited,
Hyderabad.

Respected Sir,

Sub: Project Completion-reg.

The project has been completed on a given time bond. It has been a great achievement by us to complete the prestigious project on time. It has been a great privilege, working in association with you and looking forward to working with you in future projects. We request you to please come along with your team for collecting, retrieving of important and confidential data.

Looking forward to a quick response from your side

Thanking you,

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

TOWARD BETTER STATISTICAL VALIDATION OF MACHINE LEARNING-BASED MULTIMEDIA QUALITY ESTIMATORS


PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

MIND WAVE *Informatics*

Date: 12/12/2022,

To
The Principal,
Avanthi Institute of Engineering and Technology,
Gunthapally, Hyderabad.

**Attention**: Dr.Y.Ramesh Babu, Associate Professor of Department of Mechanical Engineering.

Subject: Approval Letter for Financial Assistance for Project work entitled **"Floor Cleaning Robot"**

MINDWAVE Informatics is very much pleased to see your application and is very much impressed with your faculty profile and research field. We are happy to inform you that the manager has approved your project proposal entitled **"Floor Cleaning Robot"** We anticipate this project proposal may be of greater signifying concern to the people in this era.

Complete details of corresponding project proposal are mentioned, check it and plan accordingly .the project proposal should complete in specified time and should submit the complete information on time.

Looking forward to a meaningful collaboration with AVIH, Gunthapally

Thanks & Regards

Avanthi Institute of Engg. & Tech.
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

# 2nd Floor, SVR Towers, Opp: AXIS Bank, Sainagar Colony, Punjagutta, Hyderabad-16
Ph.No. 040-40041005 || Email: hr@mindwaveinformatics.com || www.mindwaveinformatics.com

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
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www.aietg.ac.in email: principal.avanthi@gmail.com


Dr.G. RamaChandra Reddy, M.Tech, Ph.D
Principal

AVIH/2022/R&DPROJECT Dt: 14.12.2022,

TO
The Manager,
MIND WAVE INFORMATICS,
Hyderabad.

**Sub:** Submission of detailed proposal of Floor Cleaning Robot.

Respected Sir,

With reference to letter received from your end regarding **Floor Cleaning Robot.** We are happy to submit detailed proposal along with the milestones of Design and hardware Control of Floor Cleaning Robot. We request you to discuss with your internal R&D team and communicate for further discussion.

Thank you and looking forward for your collaboration.

Principle Investigator

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Section A: General Information:**

| **Project Title** | **Floor Cleaning Robot** |
|---|---|
| Project Type<br>Research Design &Control of Floor Cleaning Robot Research Other | Floor Cleaning Robot |
| Project Location/s<br>(District State)(Must be in India) | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Stage of development<br>(initial concept proof of demonstration/scale up) | Proof of Concept - Demonstration |
| Lead Implementing Organization | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Any Partnering:<br>Organization:<br>In INDIA | NO |
| (1) Total Funding Request(INR In lakh) | 75,000 Rs/- |
| (II) Contribution in Cash/kind from lead/partnering institution if any | NO |
| Total cost (I+II)= | 75,000 Rs/- |

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Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

## FLOOR CLEANING ROBOT PROJECT PROPOSAL

ABSTRACT: The Report details about Floor cleaning Robot. Households of today are becoming smarter and more automated. In modern days interior decoration are becoming an important role in our life. Cleaning of floor is very important for our health and this BOT reduces the man power requirement. This Project is used for domestic purpose to clean the surface automatically. When its turned on it clears the dust by moving around the surface(floor or any other area) as it passes over it.Sensors are used to avoid Obstacles at the same time brushes attached to the motors to cleanse the surface. The approximate battery life is expected to be 45 minutes. This can be useful in improving the lifestyle of mankind

INTRODUCTION In recent years, robotic cleaners have taken major attention in robotic research due to their effectiveness in assisting humans in floor cleaning applications at homes, hotels, restaurants, offices, hospitals, workshops etc. Basically, robotic cleaner is distinguished on their cleaning expertise like floor mapping. In this work "Floor Cleaning Robot" is used to clean the floor along its path. The robot is fully automatic and making decision on sensor used in the robot. Ultrasonic sensors detect the obstacles and hence change its direction while moving and also preventing the cleaner to fall from height. Sensor is controlled by Arduino controller which also controls the DC motors with the help of Motor drive. The robot is supplied with 9V.The weight of the robot is under 5kgms.

**SYSTEM ARCHITECTURE**

Microcontroller (AT mega 328p) is used with clock signal(quartz crystal operating 16 MHz frequency).Sensors and Bo motors are attached to the motor driver. Hardware USED:

a. ATmega328p/Arduino

b. Ultrasonic sensor (US 015)

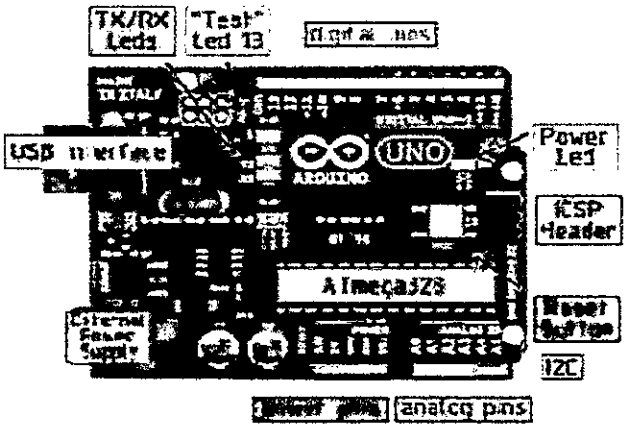
c. Motor driver (L293D)

d. Bo motors and Brushes

**ATmega328/Arduino:**

AT Mega 328p is the ATMEL Microcontroller on which Arduino board is based. The Atmel 8-bit AVR RISC-based microcontroller combines 32KB in-system Programmable Flash(ISP) memory with read-while-write capabilities,1KB EEPROM,2 KB SRAM, 23 general purpose I/O lines,32 general purpose working registers, three flexible time/counters which compare mode, internal and external interrupts, serial programmable USART, a byte oriented 2-wire serial interface, SPI serial port, 6- channel 10-bit A/D converter (8-channels in TQFP and QFN/MLF packages), programmable watchdog timer with internal oscillator, and five software selectable power saving modes. The device operates between1.8-5.5volts. The device achieves through put

approaching 1 MIPS per MHz Serial data to the MCU is clocked on the rising edge and data from the MCU is clocked on the falling edge. Power is applied toVCC while RESET and SCK are set to zero. ATmega328 is commonly used in many projects and autonomous systems where a simple, low-powered, lowcost microcontroller is needed.




**Motor Driver (L293D)**

a) Four H-Bridges: Two L293D Motor driver chips

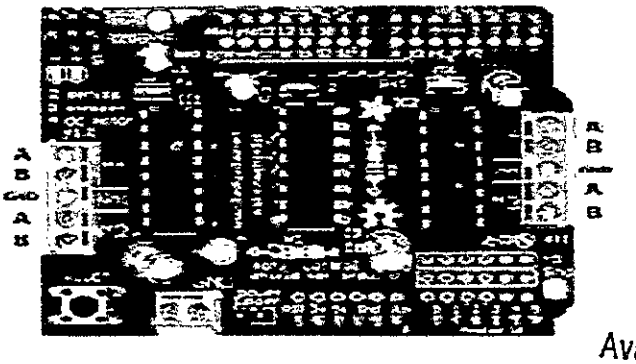
b) L293D is rated at 0.65A per bridge (1.20A peak)with thermal shutdown protection, Motor Voltages from 4.5VDC to 16VDC. (up to 36V if C6 and C7 are upgraded)

c) Up to 4 bi-directional DC motors with individual

8-bit speed selection (256 speeds)

d) Up to 2 stepper motors (unipolar or bipolar)

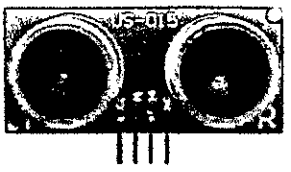
e) Pull down resistors keep motors disabled during power-up



Avanthi Institute of Engg. & Tecl
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

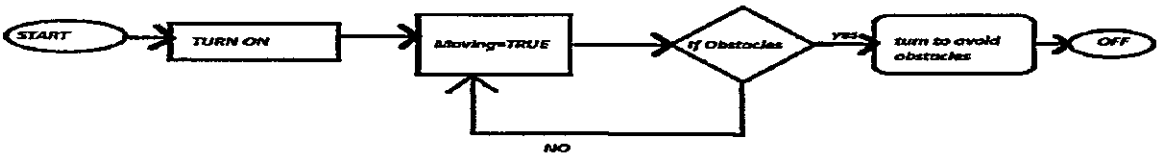
**ULTRASONIC SENSOR (US 015)**

Ultrasonic ranging module US 015 provides 2cm - 400cm non-contact measurement function, the ranging accuracy can reach to 3mm. The modules includes ultrasonic transmitters, receiver and control circuit.



**Working:**

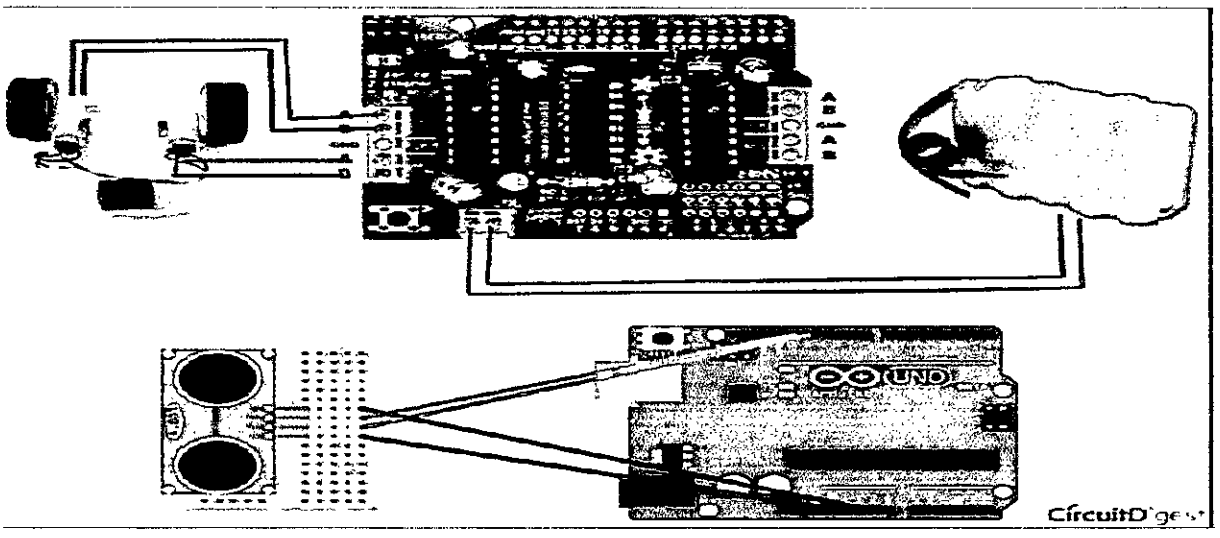
The automatic floor cleaner is intelligently programmed to clean a specific area through spinning brush cleaning assembly. The cleaner is cost effective, convenient, environment friendly that saves the valuable time of any person. The cleaning assembly is made on a rectangular piece of chassis that has two wheels beneath it and brushes attached at it's front and back in order to sweep the dirt as it passes over the surface. DC motor is used to change direction of wheels which is connected to the platform. If the enough current is produced then DC motors can be operated directly otherwise a motor driver is required so as to provide it a high current upto 0.7 to 1.2 ampere. Driver Used is named as L293D with H-Bridge Configuration. The cleaner is handy and can spin anywhere in any direction.




As the Robot is powered it starts moving in random pattern avoiding everything in its path. The 9V battery is facilitated with a connector for easy power ON and OFF. The battery powers the Motor Driver which is merged with Arduino Board. The power is distributed to each BO motors and ultrasonic sensor. The speed of the motors is assigned in the code and the motor can rotate in both directions as needed which comes in handy for the obstacle avoidances. when the US 015

sends and receives the signals and an obstacle is detected, The right wheel of the robot run by motorR goes the opposite direction(BACKWARD) and the left wheel (motorL) maintains the FORWARD Direction which results in a right turn of the whole robot. The other two BO motors(motorBL,MotorBR) is continuous and turning in a speed of 100rpm at its axis, thus maintaining a steady cleaning process no matter what the robot's path is. Which is the full scope of the project

**.Basic connection of Obstacle Avoidance Robot**



*CONCLUSION:*

This research facilitates efficient floor cleaning. Since in project the floor cleaner is incorporated with different devices like DC motor(s), ultrasonic sensors etc., so it will be easy to handle it also saves time and will work automatically for cleaning purpose at homes and offices at the same time cost efficient. With simple algorithm and program, the cleaner will be able to cover large floor areas as well as find its way into and out of small corners. As the cleaner traverses the room, the sweeper installed in it will manage to pick up a significant amount of dirt. Sweeping might not be that effective as it will not be picking up everything

**FUTURE SCOPE**

In today's era, 95 percent of the cost of cleaning a floor is done by labor. the high cost of this simple task has inspired alternative solutions. We think Floor cleaning Robot will become of them.

MIND WAVE *Informatics*

WORK ORDER

Date: 22/12/2022,

HYDERABAD,

To
The Principal,
Avanthi Institute of Engineering& Technology,
Gunthapally, Abdullapurmet Mandal, Hyderabad.

**Sub**: coordinator of Floor Cleaning Robot

Further to your of for preparing of Portal/Control for face recognition as per the Telephone Discussion quotation, we are pleased to place the work order as below

| S.NO | Description | Quantity in no | Unit Cost Rs. | Total Cost in Rs. |
|---|---|---|---|---|
| 1 | coordinator of Floor Cleaning Robot | 2 | 35,000 | 75,000 |

Work Oder Valid: One Year (22th December 2022 to 22th December 2023)

Terms& Conditions:

- Preparation of detailed drawings/Lay outs based on the reference design provided by the customer.
- Taking physical design for review and approval of our customer
- Submission of designs/lay outs for review and approval of our customer
- Incorporate any comments/feed back given by customer in the design/layouts
- Preparation of designs, lay outs, algorithms, part design, bill of materials for all designs.
- Preparation of built up designs, lay outs after completion of fabrication/Installation at site.

For MIND WAVE INFORMATICS,

MANAGER

PRINCIPAL
Avanthi Institute of Engg. & Tec
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

# 2nd Floor, SVR Towers, Opp: AXIS Bank, Srinagar Colony, Punjagutta, Hyderabad-16
Ph.No. 040-40041005 || Email: hr@mindwaveinformatics.com || www.mindwaveinformatics.com

**Section C: Financial requirement (all figure must be INR)**

| S. No | Item Head | Total (in Lakh) |
|---|---|---|
| **Capital Component** | | |
| 1 | Permanent Equipment (Located in lab/implementing organization) as per billing | 30,000/- |
| 2 | Fabricated systems/demonstration models (located at beneficiary location) | 25,000/- |
| A | Subtotal (Capital Items) | 55,000/- |
| **General Component** | | |
| 1 | Manpower and Contingencies | 10,000/- |
| 2 | Consumables | 5,000/- |
| 3 | Travel | 3,000/- |
| 4 | Overhead | -------- |
| 5 | PC | --------- |
| 6 | Printer and Scanner | 2,000/- |
| **B** | Subtotal (General) | 20,000/- |
| C | **Total cost of the project (A+B)** | 75000/- |

**I. Project Cost:75,000/-**

**II. Contribution of consortium (if any):**

**III. Total Budget (I+II):75,000/-**

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Section D: Applicant Details**

| | | |
|---|---|---|
| Name of the Lead Organization | Avanthi Institute of Engineering and Technology | |
| Address, Please include phone numbers,<br>fax, emails and website | Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.<br>email: principal.avanthi@gmail.com<br>Ph No:9849714307<br>www.aietg.ac.in | |
| Applicant Type Broad: Government/Non-Government Sub entity: Academic or research institution | ACADEMIC INSTITUTION | |
| Primary Point of Contact<br>Lead Principal investigator (PI) | Name: | Dr Y.Ramesh Babu |
| | Designation | Associate Professor |
| | Email | Mechhod.avih@gmail.com |
| | Telephone | 9492492031 |
| | Mobile | 7337038221 |
| Secondary Point of Contact | Name: | Dr RamaChandra Reddy |
| | Designation | Associate Professor |
| | Email | principal.avanthi@gmail.com |
| | Telephone | 9849714307 |
| | Mobile | 9849714234 |

| **Information on Lead PI** | **Expertise available with the Principal Investigator** |
|---|---|
| | Dr Y.Ramesh Babu, Associate Professor Dept. Of Mechanical Engineering., he would mentor the proposed research project from time to time.<br>The Principal Investigator has gained good knowledge on Robotic Controllers design and its related areas.<br>1.Guided five M.Tech project students based on his research area.<br>Guided Five B. Tech project students out of his research area.<br>2) During his research, PI has acquired knowledge of many simulations software& used them for the above said project works.<br>The tools learned by PI are as follows:<br>The Aurdino, ultrasonic modules, motor driver, and motors work on 5 volts<br>Word Processing: MS Office |

Avanthi Institute of Engg. & Tech. Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

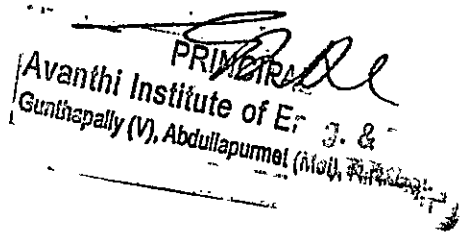
## 1.Annexure 1:Monitoring & Evaluation approach

| Time Schedule of Activities Giving milestones through BAR Diagram | | | | | |
|---|---|---|---|---|---|
| **S.No** | **WORKPLAN** | **1ST Month** | **2nd Month** | **3rd Month** | **4th Month** |
| 1 | Basic Study of the literature related for the project implementation consolidation of the available expertise. Planning of execution of the proposed project scheme | | | | |
| 2 | Procurement of experimental equipment and installation | | | | |
| 3 | Design of basic simulation of the project and control strategy using Arduino, Ultrasonic modules, motor drives | | | | |
| 4 | Implementation of research project and operational control of the test facility using Arduino, Ultrasonic modules, motor drives | | | | |
| 5 | Annual review of the progress of the project and effective guidance for implementation | | | | |
| 6 | Commissioning of the project hardware | | | | |
| 7 | Testing of the project and code | | | | |
| 8 | Experimental validation of the project | | | | |
| 9 | Report Writing | | | | |

PRINCIPAL
Avanthi Institute of Engg. & Tech.
Gunthapally.(V), Abdullapurmet (Mdl), R.R. Dist.

**Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad**

| S No | Infrastructure Facility | Yes/No/Not required/Full or Sharing Bases |
|---|---|---|
| 1 | Workshop Facility | Yes |
| 2 | Water & Electricity | Yes |
| 3 | Laboratory Space/Furniture | Yes |
| 4 | Power Generator | Yes |
| 5 | AC Room or AC | Yes |
| 6 | Telecommunication including e-mail &fax | Yes |
| 7 | Transportation | Yes |
| 8 | Administrative/ Secretarial support | Yes |
| 9 | Information facilities like Internet Library | Yes |
| 10 | Computational facilities | Yes |
| 11 | Animal/Glass House | Not required |
| 12 | Any other special facility being provided | Dedicated Control systems Lab |



**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**
(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

AVIH/2022/MECHPROJECT/01 Dt: 17.12.2022,

TO
The Manager,
MIND WAVE INFORMATICS,
Hyderabad.

**Sub:** Details of Project coordinator of Floor Cleaning Robot

Respected Sir,

We are pleased to appoint faculty for coordination of Floor Cleaning Robot. We are happy to submit detailed proposal along with the milestones of Arduino& Ultra sonic modules Automation Design and Prototype.

Details of the Faculty:

Dr Y.Ramesh Babu, Associate Professor
Department of Mech
Phone Number: 9492492031

Thank you and looking forward for your collaboration.

Principle Investigator

PRINCIPAL
Avanthi Institute of E & Tech
Gunthapally (V), Abdullapurmet(M), R.R Dist.

MIND WAVE Informatics

Date: 21.12.2022,

To,
The Principal,
Avanthi Institute of Engineering and Technology,
Gunthapally, Hyderabad.

Subject: Floor Cleaning Robot

We request you to periodically submit progress reports regarding the project. After discussion with our committee members the budget is finalized for the mentioned project proposal in attached. As per your communication the concerned faculty members are Principal Investigator Dr.Y.Ramesh Babu, Associate Professor& Department of Mech, AVIH, and Hyderabad. In this regard, we extend our facilities as well as sponsorship of Rs.75,000/-( Seventy Fifty Thousand Rupees only).

Details of the Engineer: Mr. Amaranth

Phone Number: 9505379414
Thank you and looking forward for your response.
Regards
Ravi
Managing Partner
MIND WAVE INFORMATICS

MIND WAVE INFORMATICS HYDERABAD

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

# 2nd Floor, SVR Towers, Opp: AXIS Bank, Srinagar Colony, Punjagutta, Hyderabad-16
Ph.No. 040-40041005 || Email: hr@mindwaveinformatics.com || www.mindwaveinformatics.com

**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**
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NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

Hyderabad,

Date: 17.04.2023,

From
The Principal,
Avanthi Institute of Engineering and Technology,
Hyderabad.

To
The Manager,
SHELLX Software solutions Pvt Ltd,
Hyderabad.

Respected Sir,

Sub: Project Completion-reg.

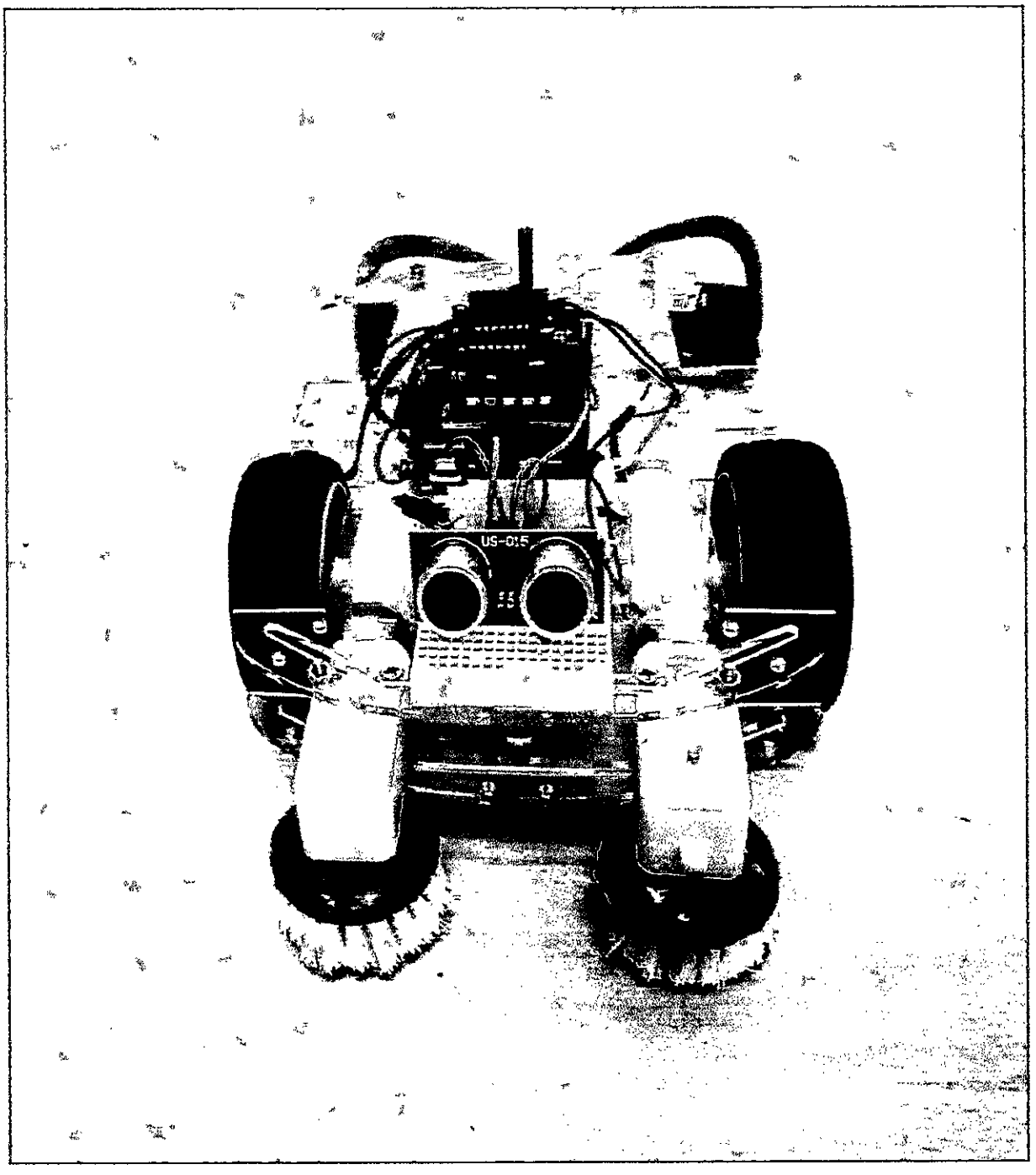
The project has been completed on a given time bond. It has been a great achievement by us to complete the prestigious project on time. It has been a great privilege, working in association with you and looking forward to working with you in future projects. We request you to please come along with your team for collecting, retrieving of important and confidential data.

Looking forward to a quick response from your side

Thanking you,

Principal
Avanthi Institute of Engineering & Technology
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**FLOOR CLEANING ROBOT PROJECT**




PRINCIPAL
Gunfiapally (V), Abdullapurmet (M), R.R. Dist.

SashakT
HR Services Pvt Ltd
HR Skilling Consulting

Date: 12/12/2022,

To
The Principal,
Avanthi Institute of Engineering and Technology,
Gunthapally, Hyderabad.

Subject: Approval Letter for Financial Assistance for Project work entitled **"Detection of suicide related posts in twitter data stream"**

MINDWAVE Informatics is very much pleased to see your application and is very much impressed with your faculty profile and research field. We are happy to inform you that the manager has approved your project proposal entitled **"Detection of suicide related posts in twitter data stream"** We anticipate this project proposal may be of greater signifying concern to the people in this era.

Complete details of corresponding project proposal are mentioned, check it and plan accordingly .the project proposal should complete in specified time and should submit the complete information on time.

Looking forward to a meaningful collaboration with AVIH, Gunthapally

.

Thanks& Regards

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

Regd office : Vanasthalipuram, Hyderabad, Telangana State - 500070.
Website : www.sashaktservices.com E-mail : info@sashaktservices.com
Cell : 9885197888, 9849714307

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com


Dr.G. RamaChandra Reddy, M.Tech, Ph.D
Principal

AVIH/2022/R&DPROJECT Dt: 14.12.2022,

TO
The Manager,
SashakT HR Services Pvt Ltd,
Hyderabad.

**Sub:** Submission of detailed proposal of Detection of suicide related posts in twitter data stream.

Respected Sir,

With reference to letter received from your end regarding **Detection of suicide related posts in twitter data stream**. We are happy to submit detailed proposal along with the milestones of Design and hardware Control of Detection of suicide related posts in twitter data stream. We request you to discuss with your internal R&D team and communicate for further discussion.

Thank you and looking forward for your collaboration.

Principle Investigator

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Section A: General Information:**

| | |
|---|---|
| **Project Title** | **Detection of suicide related posts in twitter data stream** |
| Project Type<br>Research Design &Control of Floor Cleaning Robot Research Other | Detection of suicide related posts in twitter data stream |
| Project Location/s<br>(District State)(Must be in India) | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Stage of development<br>(initial concept proof of demonstration/scale up) | Proof of Concept - Demonstration |
| Lead Implementing Organization | Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad |
| Any Partnering:<br>Organization:<br>In INDIA | NO |
| (1) Total Funding Request(INR In lakh) | 75,000 Rs/- |
| (II) Contribution in Cash/kind from lead/partnering institution if any | NO |
| Total cost (I+II)= . | 75,000 Rs/- |

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R.Dist.

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**Detection of suicide related posts in twitter data stream Project Proposal**

ABSTRACT: Self-destructive ideation discovery in online interpersonal organizations is a developing examination zone with significant difficulties. Late research has demonstrated that the freely accessible data, spread crosswise over internet based life stages, holds profitable pointers for viably recognizing people with self-destructive aims. The key test of suicide avoidance is understanding and distinguishing the perplexing danger factors and cautioning signs that may accelerate the occasion. In this paper, we present another methodology that utilizes the web based life stage Twitter to evaluate suicide cautioning signs for people and to distinguish posts containing suicide-related substance. The fundamental innovation of this methodology is the programmed distinguishing proof of unexpected changes in a client's online conduct. To recognize such changes, we join characteristic language preparing procedures to total conduct and printed highlights and pass these highlights through a martingale system, which is generally utilized for change recognition in information streams. Investigations demonstrate that our content scoring approach adequately catches cautioning signs in content contrasted with conventional AI classifiers. Also, the utilization of the martingale system features changes in online conduct and shows guarantee for identifying social changes in danger people.

INTRODUCTION

As indicated by the World Health Organization (WHO), it is evaluated those 800,000 individuals overall kick the bucket by suicide every year with in any event the same number of suicide endeavours. The misery felt in the outcome of such an occasion is exacerbated by the way that a suicide might be averted. This truth of suicide has spurred WHO part states to subscribe to decreasing the rate of suicide by a huge percent by 2020. With an end goal to instruct general society, the American Foundation for Suicide Prevention (AFSP) has recognized qualities or conditions that may build a person's hazard. The three noteworthy hazard factors are: 1) wellbeing factors (e.g., emotional well-being, interminable agony), 2) natural variables (e.g., badgering, and unpleasant life occasions), and 3) chronicled factors (e.g., past suicide endeavours and family ancestry). Furthermore, the time span going before a suicide can hold signs to a person's battle. The AFSP sorts these notice signs as pursues: 1) talk (e.g., referencing being a weight or having no motivation to live), 2) conduct (e.g., pulling back from exercises or dozing excessively or excessively little), and 3) temperament

(e.g., despondency or anger). Distinguishing these hazard factors is the initial phase in suicide aversion. Nonetheless, the social shame encompassing dysfunctional behaviors implies that in danger people may stay away from expert help. Indeed, they might be all the more eager to swing to less formal assets for help. As of late, online web-based social networking systems have turned out to be one such casual asset. Research has appeared in danger people are swinging to contemporary innovations (discussions or miniaturized scale online journals) to express their most profound battles without confronting somebody legitimately. Thus, suicide chance factors and cautioning signs have been found in another field. There are even occasions of suicide exploited people composing their last musings on Twitter, Facebook, and other online networks. We trust that this extensive measure of information on individuals' sentiments and practices can be utilized effectively for early discovery of conduct changes in danger people and may even help avert passings. Social figuring research has concentrated on this point lately. In any case, couple of activities have been worried about the ongoing identification of self destructive ideation on Twitter. Recently proposed recognition strategies depend intensely on physically commented on discourse, which can restrict their viability due to some degree to the changing types of suicide cautioning signs in danger people. A considerable lot of these strategies likewise centre on the messages distributed by people at a particular time, autonomous of the entire setting, which might be spoken to by the succession of productions after some time. In this paper, we address the test of ongoing investigation of Twitter posts and the discovery of suicide-related conduct. To process the surge of a person's online substance, we execute a martingale structure, which is generally utilized for the identification of changes in information stream settings. The contribution to this structure is a progression of conduct highlights figured from every individual Twitter post (tweet). These highlights are contrasted with recently observed conduct, so as to distinguish an abrupt change in feeling that may demonstrate a raised danger of suicide. The principle commitments of this paper are twofold. In the first place, utilizing research from the field of brain science, we plan and create conduct highlights to evaluate the dimension of hazard for a person as per his online conduct on Twitter (discourse, diurnal exercises, size of interpersonal organization, and so on.). Specifically, we make an element for content examination called the Suicide Prevention Assistant (SPA) content score. Second, we screen the surge of an individual Twitter client and his social highlights utilizing an inventive use of a martingale structure to recognize unexpected conduct changes.

## RELATED WORK

The definition and distinguishing proof of hazard factors and cautioning signs lie at the centre of suicide anticipation endeavours. In this paper, we have referenced the hazard factors characterized by the American Psychiatric Association (APA) and the notice signs distinguished by the American Association of Suicidology (AAS). These assets speak to a dimension of agreement between psychological wellness experts and furthermore give a rich talk of the contrasts between suicide hazard factors and cautioning signs. For further understanding, we direct the peruse to crafted by . As featured by, notice signs imply expanded fast approaching danger for suicide (i.e., inside minutes, hours, or days). As indicated by the APA, suicide cautioning signs may incorporate looking at biting the dust, huge late misfortune (demise, separation, division, or broken relationship), change in identity, dread of losing control, suicide plan, self-destructive contemplations, or no desire for what's to come. As talked about in the accompanying passages, late research has given the development of such hints on person to person communication destinations. The vast majority of the exploration at the crossing point of conduct wellbeing issue and web'based life has concentrated on sorrow recognition in online networks, explicitly Major Depressive Episodes (MDE). Be that as it may, the hazard factors for suicide characterized by the APA go a long ways past sadness alone. Remember that misery does not really infer self destructive ideation. Or maybe, suicide ought to be thought of as a potential end side effect of despondency.

While psychological well-being issues, for example, misery, self-destructive ideation, and self-mutilation are characterized restoratively as independent sicknesses with covering side effects, the methodologies proposed to distinguish them online can be very comparative. The methodologies differ in the information they are treating, i.e., Facebook posts, Twitter tweets, Reddit discussion strings, and so forth., and the particular occasion they are endeavouring to anticipate. Moreno et al. first shown that interpersonal interaction locales could be a potential road for distinguishing understudies experiencing misery. The pervasiveness rates found for sorrow revealed on Facebook related to past works in which such data was self announced. On a bigger scale, Jashinsky et al. demonstrated relationship between's Twitter determined and real United States per-state suicide information. Together, these works set up the nearness of sadness divulgence in online networks and opened up another road for psychological well-being research. DeChoudhury et al. investigated the possibility to utilize online life to distinguish and anticipate real burdensome scenes in Twitter clients utilizing publicly

supporting methods, the creators manufactured a partner of Twitter clients scoring high for sadness on the CES-D (Centre for Epidemiologic Studies Depression Scale) scale and for different clients scoring low. Contemplating these two classes, they found that what is known from customary writing on burdensome conduct likewise means internet based life. For instance, clients with a high CESD score posted all the more much of the time late around evening time, associated less with their online companions, and had a higher utilization of first-individual pronouns. Moreover, online etymological examples coordinate past discoveries with respect to language utilization of discouraged people. All the more as of late, De Choudhury et al. have appeared phonetic highlights are imperative indicators in recognizing people progressing from mental talk via web-based networking media to self destructive ideation. The creators demonstrated various markers describing these movements, including social commitment, sign of misery, nervousness, and indiscretion dependent on a little subset of Reddit posts.

These works have demonstrated that people unveil their sorrow and different battles to online networks, which shows that internet based life systems can be utilized as another field for contemplating emotional well-being. In spite of the strong establishment, the present writing is missing potential key factors in the push to recognize despondency and anticipate suicide. As of now, few works dissect the development of a person's online conduct. Or maybe, the investigation is static and may contemplate one post or tweet at any given moment while disregarding the entire setting. Furthermore, a person's online "discourse" is frequently contrasted with different people and not to their very own phonetic style. This is an inconvenience since two people enduring a similar seriousness of sorrow may communicate in all respects diversely on the web.

## PROPOSED WORK

Detecting suicide-related posts in social networks We present the proposed framework for the analysis and real-time detection of suicide-related posts on Twitter. First, we introduce the real-time detection problem. Then, we define our online proxy measurements (behaviour features) for suicide warning signs. Finally, we describe the approach we implement for detecting behavioural change points

Sudden behavioural change is one of the most important suicide warning signs. As reported by the AFSP, a person's suicide risk is greater if behaviour is new or has increased, especially if it is related to a painful event, loss, or change. Considering this in conjunction with social media, where users constantly publish messages and deliberately express their feelings, we address suicide warning sign detection as a real-time data stream mining problem. Given a series of observations over time (tweets, messages, or blog posts), the task is to detect an abrupt change in a user behaviour that may be considered as a suicide warning sign. In the field of data stream mining, this can be specifically seen as change point detection problem. However, unlike retrospective detection settings, which focus on batch processing, here we are interested in the setting where the data arrives as a stream in real time. To address this challenge, we chose an approach employing a martingale framework for change point detection. This algorithm has been successfully applied to detecting changes in unlabelled data streams, video-shot change detection, and, more recently, in the detection of news events in social networks. To the best of our knowledge, this is the first attempt to apply the martingale framework on a multidimensional data stream generated by Twitter users.

**Suicide warning signs in online behaviour**

To identify online behaviours that may reflect the mental state of a Twitter user, we established two groups of behavioural features: user-centric and post-centric features. User-centric features characterize the behaviour of the user in the Twitter community, while post-centric features are characteristics that are extracted from the properties of a tweet. These features have been shown to successfully aid in determining the mental health of a user.

The AAS identifies withdrawing from friends, family, or society as one of the warning signs of suicide. With the user-centric behavioural features, we aim to capture changes in a Twitter user's engagement with other users. The friends and followers features can quantify an individual's interaction with his or her online community, such as a sudden decrease in communication. On the other hand, they can also reflect an expansion of an individual's online community. This is relevant, as at-risk individuals have also been shown to increase their time online developing personal relationships. It is important to note that we have

chosen the terms friends and followers to represent the unidirectional relationships that are inherent on Twitter. We acknowledge that this term may not apply for certain user accounts such as celebrities and news outlets.

Additional features include volume, replies, retweets, and links, which were all identified by De Choudhury et al. as markers for mental health. These measures can help to quantify the number of interactions a user has with their friends and followers for it could be the case that an individual's social network remains stable while their interactions increase or decrease. The final user-centric feature, questions, may also indicate a user's attempt to engage with others online. Post-centric behavioural features are characteristics originating from the post itself. One important piece of information is the hour at which the tweet is published (time feature). Late night activity can be an indication of unusual rhythms in sleep (insomnia and hypersomnia) and can predict future episodes of depression. In addition to the time feature, we address the text of the post (text score), which holds the most vital information pertaining to an individual's current mood and mental health.

To classify the text of the post, we propose two different approaches. The first approach is a natural language processing (NLP) method that combines features generated from the text, based on an ensemble of lexicons. These lexicons are composed of linguistic themes commonly exhibited by at-risk individuals. The second approach, called the distress classifier, is based on machine learning. Although machine learning is commonly used to classify text, the supervised algorithms require annotated datasets, which may be costly in terms of time and potential annotator error. Additionally, traditional machine learning methods are difficult to apply in this context because of the nature of depression and distress in general. Two individuals suffering from depression may not express their symptoms in the same way, which translates to texts exhibiting the same level of depression or distress having vastly different content. This means it is difficult for the algorithm to find the concept mapping between the textual features and the level of depression/distress

**Feature extraction for text scoring**

To extract and compute features using NLP techniques, we start by creating a new symptom lexicon to identify the most discriminating terms commonly used by distressed or depressed

individuals. Instead of manually translating questionnaires and generating synonyms, we decided to create the lexicon directly from a collection of tweets. For this purpose, we implemented the point wise mutual information (PMI), measure, which highlights the dependence between two random variables.

## CONCLUSION

In this paper, we planned and assessed a novel way to deal with screen the psychological wellbeing of a client on Twitter. Working off existing examination, we attempted to interpret and measure suicide cautioning signs in an online setting (client driven and post-driven social highlights). Specifically, we concentrated on recognizing trouble related and suicide-related substance and created two ways to deal with score a tweet: a NLP-based methodology and an increasingly customary AI content classifier. To identify changes in enthusiastic prosperity, we considered a Twitter client's action as a flood of perceptions and connected a martingale structure to distinguish change focuses inside that stream. Our investigations demonstrate that our NLP content scoring approach effectively isolates out tweets displaying trouble related substance and goes about as a ground-breaking contribution to the martingale structure. While the martingale esteems "respond" to changes in online discourse, the change point location technique needs improvement. We had the capacity to recognize the genuine change point for one approval case, yet the methodology should be increasingly vigorous concerning parameter setting and positive changes in discourse.

**Section C: Financial requirement (all figure must be INR)**

| S. No | Item Head | Total (in Lakh) |
|---|---|---|
| **Capital Component** | | |
| 1 | Permanent Equipment (Located in lab/implementing organization) as per billing | 30,000/- |
| 2 | Fabricated systems/demonstration models (located at beneficiary location) | 25,000/- |
| A | Subtotal (Capital Items) | 55,000/- |
| **General Component** | | |
| 1 | Manpower and Contingencies | 10,000/- |
| 2 | Consumables | 5,000/- |
| 3 | Travel | 3,000/- |
| 4 | Overhead | -------- |
| 5 | PC | --------- |
| 6 | Printer and Scanner | 2,000/- |
| **B** | Subtotal (General) | 20,000/- |
| C | **Total cost of the project (A+B)** | 75000/- |

I. **Project Cost:75,000/-**
II. **Contribution of consortium (if any):**
III. **Total Budget (I+II):75,000/-**

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Section D: Applicant Details**

| | | |
|---|---|---|
| Name of the Lead Organization | Avanthi Institute of Engineering and Technology | |
| Address, Please include phone numbers,<br>fax, emails and website | Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.<br>email: principal.avanthi@gmail.com<br>Ph No:9849714307<br>www.aietg.ac.in | |
| Applicant Type Broad: Government/Non-Government Sub entity: Academic or research institution | ACADEMIC INSTITUTION | |
| Primary Point of Contact<br>Lead Principal investigator (PI) | Name: | Dr.Shaik Shakeer basha |
| | Designation | Associate Professor |
| | Email | csehod.avih@gmail.com |
| | Telephone | 9868458787 |
| | Mobile | 7337145469 |
| Secondary Point of Contact | Name: | Dr RamaChandra Reddy |
| | Designation | Associate Professor |
| | Email | principal.avanthi@gmail.com |
| | Telephone | 9849714307 |
| | Mobile | 9849714234 |

| **Information on Lead PI** | **Expertise available with the Principal Investigator** |
|---|---|
| | Dr. Shaik Shakeer basha, Associate Professor Dept. Of Computer Science Engineering, he would mentor the proposed research project from time to time.<br>The Principal Investigator has gained good knowledge on Robotic Controllers design and its related areas.<br>1.Guided four M.Tech project students based on his research area.<br>Guided Five B. Tech project students out of his research area.<br>2) During his research, PI has acquired knowledge of many simulations software& used them for the above said project works.<br>The tools learned by PI are as follows:<br>The Aurdino, ultrasonic modules, .<br>Word Processing: MS Office |

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

SashakT
HR Services Pvt Ltd

WORK ORDER

Date: 22/12/2022,

HYDERABAD,

To
The Principal,
Avanthi Institute of Engineering& Technology,
Gunthapally, Abdullapurmet Mandal, Hyderabad.

**Sub: Detection of suicide related posts in twitter data stream**

Further to your of for preparing Detection of suicide related posts in twitter data stream as per the Telephone Discussion quotation, we are pleased to place the work order as below.

| S.NO | Description | Quantity in no | Unit Cost Rs. | Total Cost in Rs. |
|---|---|---|---|---|
| 1 | Detection of suicide related posts in twitter data stream | 1 | 75,000 | 75,000 |

Work Oder Valid: One Year (22th December 2022 to 22th December 2023)

Terms& Conditions:

- Preparation of detailed drawings/Lay outs based on the reference design provided by the customer.
- Taking physical design for review and approval of our customer
- Submission of designs/lay outs for review and approval of our customer
- Incorporate any comments/feed back given by customer in the design/layouts
- Preparation of designs, lay outs, algorithms, part design, bill of materials for all designs.
- Preparation of built up designs, lay outs after completion of fabrication/Installation at site.

For SashakT HR Services Pvt Ltd,
MANAGER

PRINCIPAL
Avanthi Institute of Engg. & Tech.
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**1.Annexure 1:Monitoring & Evaluation approach**

| Time Schedule of Activities Giving milestones through BAR Diagram | | | | | |
|---|---|---|---|---|---|
| **S.No** | **WORKPLAN** | **1ST Month** | **2nd Month** | **3rd Month** | **4th Month** |
| 1 | Basic Study of the literature related for the project implementation consolidation of the available expertise. Planning of execution of the proposed project scheme | | | | |
| 2 | Procurement of experimental equipment and installation | | | | |
| 3 | Design of basic simulation of the project and control strategy using Arduino, Ultrasonic modules, motor drives | | | | |
| 4 | Implementation of research project and operational control of the test facility using Arduino, Ultrasonic modules, motor drives | | | | |
| 5 | Annual review of the progress of the project and effective guidance for implementation | | | | |
| 6 | Commissioning of the project hardware | | | | |
| 7 | Testing of the project and code | | | | |
| 8 | Experimental validation of the project | | | | |
| 9 | Report Writing | | | | |

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Avanthi Institute of Engineering and Technology, Gunthapally, Hyderabad**

| S No | Infrastructure Facility | Yes/No/Not required/Full or Sharing Bases |
|---|---|---|
| 1 | Workshop Facility | Yes |
| 2 | Water & Electricity | Yes |
| 3 | Laboratory Space/Furniture | Yes |
| 4 | Power Generator | Yes |
| 5 | AC Room or AC | Yes |
| 6 | Telecommunication including e-mail &fax | Yes |
| 7 | Transportation | Yes |
| 8 | Administrative/ Secretarial support | Yes |
| 9 | Information facilities like Internet Library | Yes |
| 10 | Computational facilities | Yes |
| 11 | Animal/Glass House | Not required |
| 12 | Any other special facility being provided | Dedicated Control systems Lab |

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**
(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

AVIH/2022/R&DPROJECT Dt: 17.12.2022,

TO
The Manager,
SashakT HR Services Pvt Ltd,
Hyderabad.

**Sub:** Details of Project Detection of suicide related posts in twitter data stream

Respected Sir,

We are pleased to appoint faculty for coordination of Detection of suicide related posts in twitter data stream. We are happy to submit detailed proposal along with the milestones of Aurdino & Ultra sonic modules Automation Design and Prototype.

Details of the Faculty:

Dr. Shaik Shakeer basha, Associate Professor
Department of CSE
Phone Number: 8968754896

Thank you and looking forward for your collaboration.

Principle Investigator

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

SashakT
HR Services Pvt Ltd
HR Skilling Consulting

Date: 21.12.2022,

To,
The Principal,
Avanthi Institute of Engineering and Technology,
Gunthapally, Hyderabad.

Subject: Floor Cleaning Robot

We request you to periodically submit progress reports regarding the project. After discussion with our committee members the budget is finalized for the mentioned project proposal in attached. As per your communication the concerned faculty members are Principal Investigator Dr. Shaik Shakeer basha , Associate Professor& Department of CSE, AVIH, and Hyderabad. In this regard, we extend our facilities as well as sponsorship of Rs.75,000/-( Seventy Fifty Thousand Rupees only).

Details of the Engineer: Mr G.Sravan kumar

Phone Number: 8769685452
Thank you and looking forward for your response.
Regards
Ravi
Managing Partner
SashakT HR Services Pvt Ltd

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**
(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

Hyderabad,

Date: 03.03.2023,

From
The Principal,
Avanthi Institute of Engineering and Technology,
Hyderabad.

To
The Manager,
SHELLX Software solutions Pvt Ltd,
Hyderabad.

Respected Sir,

Sub: Project Completion-reg.

The project has been completed on a given time bond. It has been a great achievement by us to complete the prestigious project on time. It has been a great privilege, working in association with you and looking forward to working with you in future projects. We request you to please come along with your team for collecting, retrieving of important and confidential data.

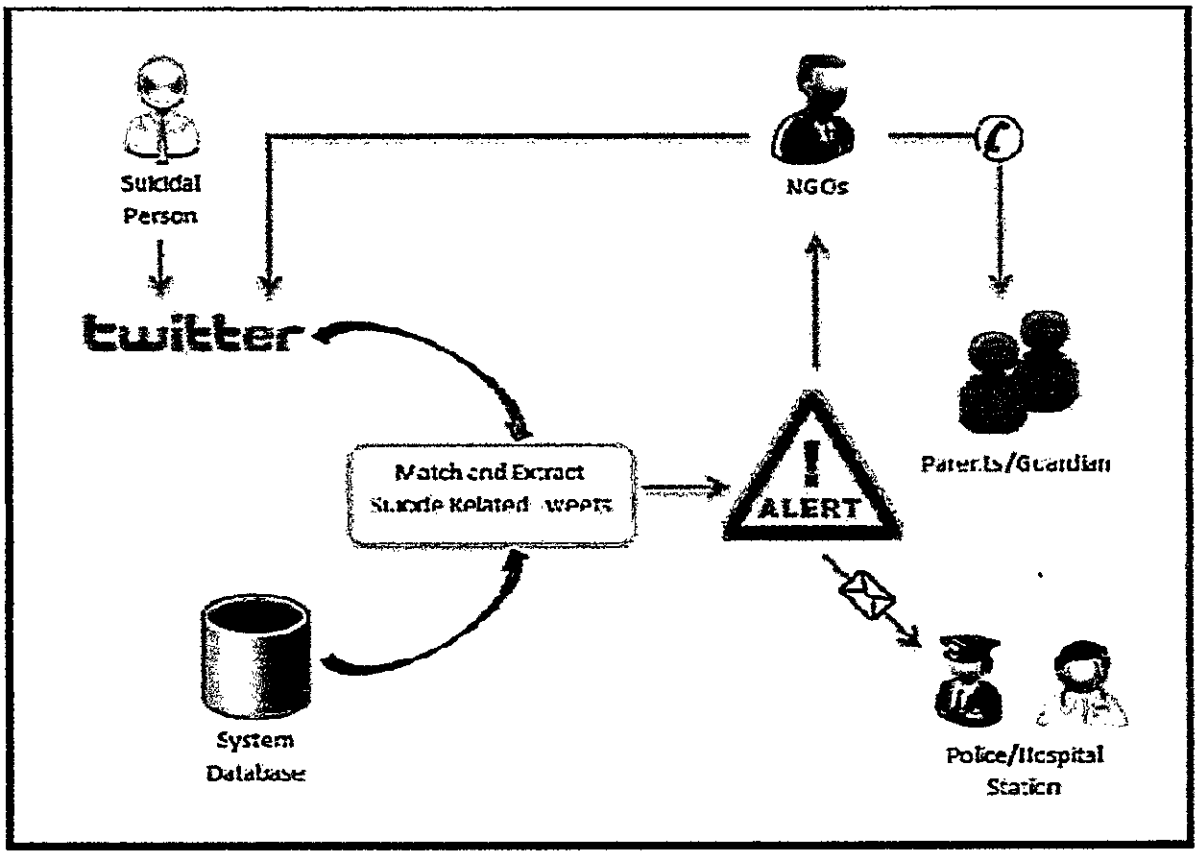
Looking forward to a quick response from your side

Thanking you,

Principal

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

**Detection of suicide related posts in twitter data stream**

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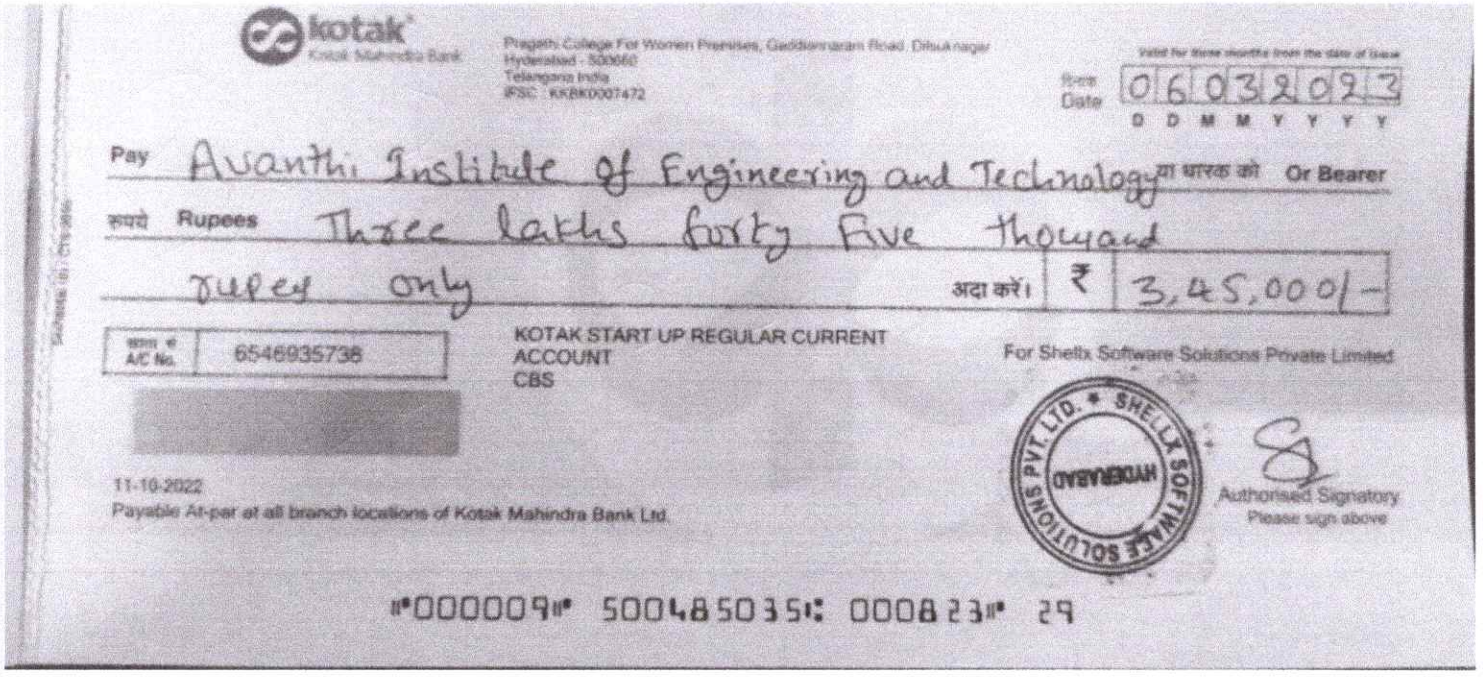
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.



kotak
Kotak Mahindra Bank

Pragathi College For Women Premises, Gaddiannaram Road, Dilsukhnagar
Hyderabad - 500660
Telangana India
IFSC : KKBK0007472

Valid for three months from the date of issue

दिनांक Date 06 03 2023
D D M M Y Y Y Y

Pay Avanthi Institute of Engineering and Technology या धारक को Or Bearer

रुपये Rupees Three lakhs forty Five thousand
Rupey only अदा करें। ₹ 3,45,000/-

खाता सं A/C No. 6546935738

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CBS

For Shelix Software Solutions Private Limited

SHELIX SOFTWARE SOLUTIONS PVT. LTD. HYDERABAD

Authorised Signatory
Please sign above

11-10-2022
Payable At-par at all branch locations of Kotak Mahindra Bank Ltd.

⑈000009⑈ 500485035⑆ 000823⑈ 29

PRINCIPAL
Avanthi Institute of Engg. & Tech
Guntihapally (V), Abdullapurmet (Mdl) R.R.Dist

KVB Karur Vysya Bank

Valid only for 3 months

Payable at all branches

29 03 2023
D D M M Y Y Y Y

THE KARUR VYSYA BANK LIMITED दि करूर वैश्य बैंक लिमिटेड

HYD DILSUKH NAGAR-500060

IFSC KVBL0001456

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Or Bearer
या धारक को

Rupees One Lakh Five thousand Rupees only

₹ 1,05,000/-

| A/c No. खाता सं. | 1456135000003564 | INITIAL आद्याक्षर |
|---|---|---|

NEW ACCOUNT

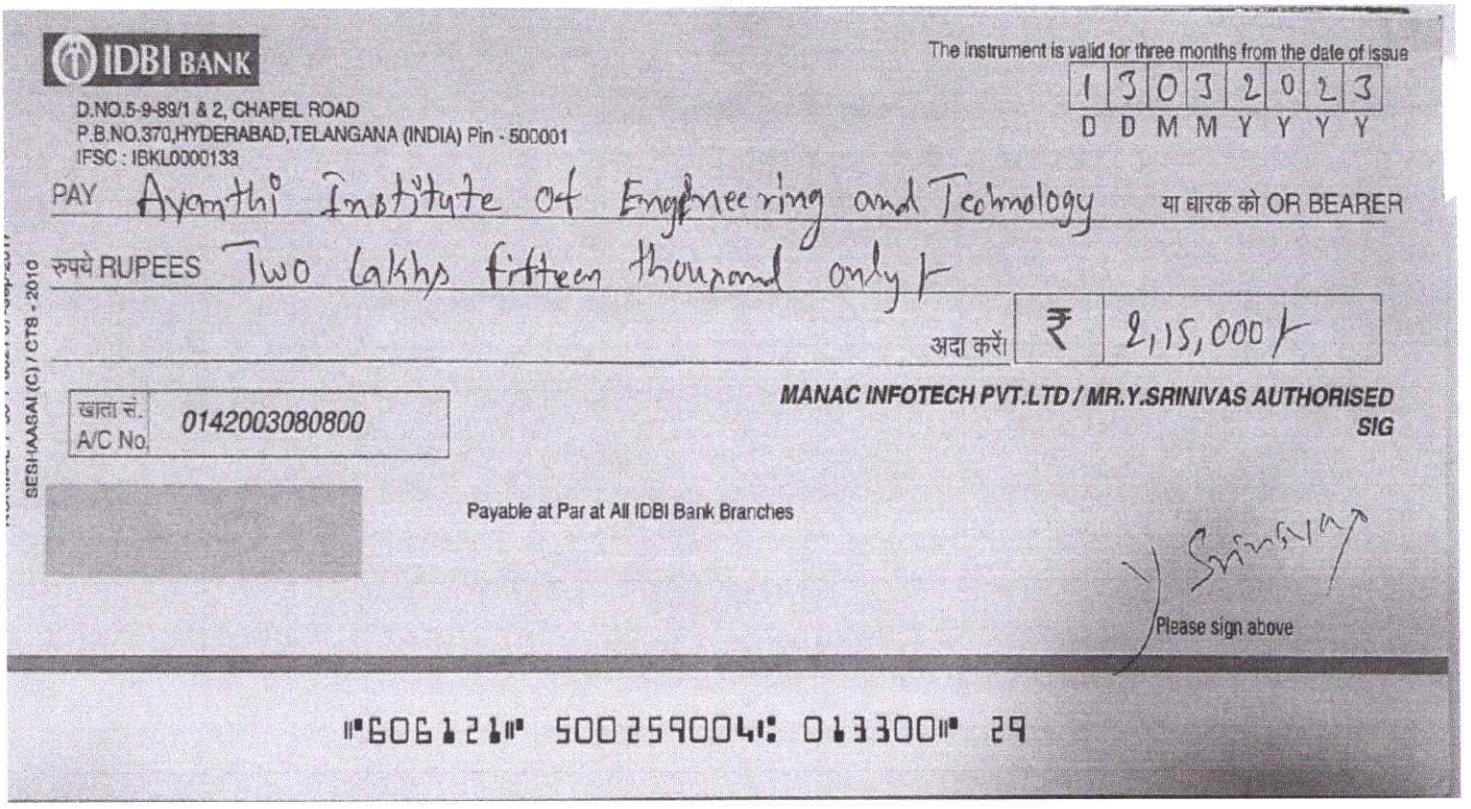
FOR CONSCIENCE ACADEMIC SOLUTIONS

BVKReddy KVRaju

PARTNER(S)/AUTHORISED SIGNATORY

Please sign above

⑈000138⑈ 500053010⑆ 003564⑈ 29



IDBI BANK

D.NO.5-9-89/1 & 2, CHAPEL ROAD
P.B.NO.370,HYDERABAD,TELANGANA (INDIA) Pin - 500001
IFSC : IBKL0000133

The instrument is valid for three months from the date of issue

| 1 | 3 | 0 | 3 | 2 | 0 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| D | D | M | M | Y | Y | Y | Y |

PAY Avanthi Institute of Engineering and Technology या धारक को OR BEARER

रुपये RUPEES Two Lakhs fifteen thousand only/-

अदा करें ₹ 2,15,000/-

खाता सं. A/C No. 0142003080800

MANAC INFOTECH PVT.LTD / MR.Y.SRINIVAS AUTHORISED SIG

Payable at Par at All IDBI Bank Branches

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SESHAASAI (C) / CTS - 2010

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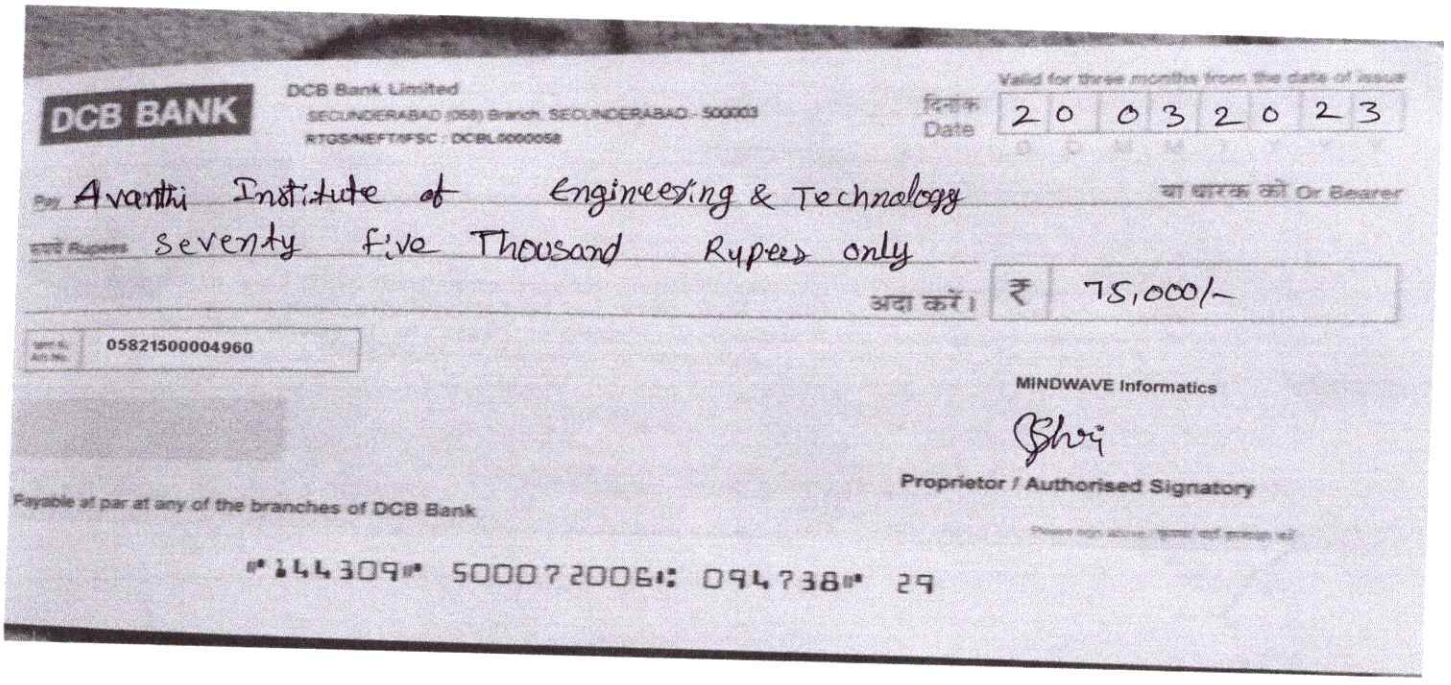
Avanthi Institute of Engg. & Tech
Guntihapally (V), Abdullapurmet (Mdl) R.R.Dist



DCB BANK

DCB Bank Limited
SECUNDERABAD (058) Branch, SECUNDERABAD - 500003
RTGS/NEFT/IFSC : DCBL0000058

Valid for three months from the date of issue

दिनांक Date 20 03 2023

Pay Avanthi Institute of Engineering & Technology या धारक को Or Bearer

रुपये Rupees Seventy five Thousand Rupees only अदा करें।

₹ 75,000/-

05821500004960

MINDWAVE Informatics

Proprietor / Authorised Signatory

Payable at par at any of the branches of DCB Bank

⑈144309⑈ 500072006⑆ 094738⑈ 29

PRINCIPAL
Avanthi Institute of Engg. & Tech
Guntihapally (V), Abdullapurmet (Mdl) R.R.Dist

Union Bank of India

HYDERABAD HAYATH NAGAR (13315)
Hyderabad, Telangana - 500070
IFS CODE- CNRB0013315

Valid for three months only from the date

MULTI-CITY CA 24022022
D D M M Y Y Y Y

Pay Avanthi Institute of Engg & Tech

Rupees रुपये Seventy Five Thousands only

अदा करें ₹ 75,000/-

A/c No. 120000640273

325714

Authorised Signatory
Please sign above

⑈325714⑈ 500015168⑆ 550221⑈ 29

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

AXIS BANK

**AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**

Joint Holder :- -

GUNTHAPALLY VILLAGE, HAYATH NAGAR
MANDAL RANGA REDDY DIST
HYDERABAD
TELANGANA-INDIA
501512

Customer ID :879983002
IFSC Code :UTIB0002738
MICR Code :500211055
Nominee Registered : N

Registered Mobile No :XXXXXX5659
Registered Email ID:
Scheme :SB-TRUST/SOCIETY/NGO/GOVT

PAN :AAATA3530B

**Statement of Axis Account No :918010018620123 for the period (From : 08-03-2023 To : 09-03-2023)**

| Tran Date | Chq No | Particulars | Debit | Credit | Balance | Init. Br |
|---|---|---|---|---|---|---|
| | | **OPENING BALANCE** | | | **7953786.34** | |
| 08-03-2023 | | AVANTHI INST OF ENG & TECH - 05 06.03 to 07.03.23 | | 84500.00 | 8038286.34 | 274 |
| 09-03-2023 | | AVANTHI INST OF ENG & TECH - 05 08.03.23 | | 178000.00 | 8216286.34 | 274 |
| 09-03-2023 | | TRF/SHELLX SOFTWARE SOLUTIONS PRIVATE LIMITED/ | | 345000.00 | 8561286.34 | 7472 |
| | | **TRANSACTION TOTAL** | **.00** | **607500.00** | | |
| | | **CLOSING BALANCE** | | | **8561286.34** | |

Unless the constituent notifies the bank immediately of any discrepancy found by him/her in this statement of Account, it will be taken that he/she has found the account correct.

The closing balance as shown/displayed includes not only the credit balance and / or overdraft limit, but also funds which are under clearing. It excludes the amount marked as lien, if any. Hence the closing balance displayed may not be the effective available balance. For any further clarifications, please contact the Branch.

We would like to reiterate that, as a policy, Axis Bank does not ask you to part with/disclose/revalidate of your iConnect passord,login id and debit card number through emails OR phone call Further,we would like to reiterate that Axis Bank shall not be liable for any losses arising from you sharing/disclosing of your login id, password and debit card number to anyone. Please co-operate by forwarding all such suspicious/spam emails, if received by you, to customer.service@axisbank.com

With effect from 1st August 2016, the replacement charges for Debit card and ATM card applicable on Current accounts have been revised. To know more about the applicable charges,please visit www.axisbank.com

Deposit Insurance and Credit Guarantee Corporation (DICGC) insurance cover is applicable in all Banks' deposits, such as savings, current, fixed, recurring etc* up to maximum amount of Rs 5 Lakh including principal & interest both* (* or exceptions and details please refer www.dicgc.org.in )

In compliance with regulatory guidelines, the non-CTS cheque books attached to the accounts would be destroyed in banks core banking System. Thus, Non CTS cheques will not be valid for CASH, Clearing and Transfer transactions

REGISTERED OFFICE - AXIS BANK LTD,TRISHUL,Opp. Samartheswar Temple, Near Law Garden, Ellisbridge, Ahmedabad . 380006.This is a system generated output and requires no signature.

BRANCH ADDRESS - AXIS BANK LTD, VANASTHALIPURAM HYD TG, DOOR NO 5-5-1189, SY NO.15(P), PLOT NO 2/A & 3/B, SAHEB NAGAR, KURD,HAYATHNAGAR(M), LB NAGAR CIRCLE III, 500070, HYDERABAD, TELANGANA, INDIA, TEL:040-24113411 FAX:

**Legends :**

ICONN - Transaction trough Internet Banking
VMT-ICON - Visa Money Transfer through Internet Banking
AUTOSWEEP - Transfer to linked fixed deposit
REV SWEEP - Interest on Linked fixed Deposit
SWEEP TRF - Transfer from Linked Fixed Deposit / Account
VMT - Visa Money Transfer through ATM
CWDR - Cash Withdrawal through ATM
PUR - POS purchase
TIP/ SCG - Surcharge on usage of debit card at pumps/railway ticket purchase or hotel tips
RATE.DIFF - Difference in rates on usage of card internationally
CLG - Cheque Clearing Transaction
EDC - Credit transaction through EDC Machine

PRINCIPAL
Avanthi Institute of Engg. & Tech
Guntihapally (V), Abdullapurmet (Mdl) R.R.Dist

SETU - Seamless electronic fund transfer through AXIS Bank
Int.pd - Interest paid to customer
Int.Coll - Interest collected from the customer

**++++ End of Statement ++++**

PRINCIPAL
Avanthi Institute of Engg. & Tech
Guntihapally (V), Abdullapurmet (Mdl) R.R.Dist

AXIS BANK

**AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**
Joint Holder :- -
GUNTHAPALLY VILLAGE, HAYATH NAGAR
MANDAL RANGA REDDY DIST
HYDERABAD
TELANGANA-INDIA
501512

Customer ID :879983002
IFSC Code :UTIB0002738
MICR Code :500211055
Nominee Registered : N

Registered Mobile No :XXXXXX5659
Registered Email ID:
Scheme :SB-TRUST/SOCIETY/NGO/GOVT

PAN :AAATA3530B

**Statement of Axis Account No :918010018620123 for the period (From : 29-03-2023 To : 31-03-2023)**

| Tran Date | Chq No | Particulars | Debit | Credit | Balance | Init. Br |
|---|---|---|---|---|---|---|
| | | **OPENING BALANCE** | | | **663327.34** | |
| 29-03-2023 | | NEFT/0128032318730/1 | 19153.00 | | 644174.34 | 2738 |
| 29-03-2023 | | NEFT/0128032323221/4 | 15846.00 | | 628328.34 | 2738 |
| 29-03-2023 | | NEFT/012903232293/7 | 7739.00 | | 620589.34 | 2738 |
| 29-03-2023 | | IFT/0128032323221/5 | 55564.00 | | 565025.34 | 2738 |
| 29-03-2023 | | IFT/012903232293/20 | 36370.00 | | 528655.34 | 2738 |
| 29-03-2023 | | AVANTHI INST OF ENG & TECH - 05 28.03.23 | | 10500.00 | 539155.34 | 274 |
| 30-03-2023 | | NEFT/N089232393572093/SAN PRINTS PVT LTD/NEFT | | 15808.20 | 554963.54 | 248 |
| 31-03-2023 | | AVANTHI INST OF ENG & TECH - 05 29.03 to 30.03.23 | | 30500.00 | 585463.54 | 274 |
| 31-03-2023 | | TRF/CONSCIENCE TECHNOLOGIES/REDDY/ | | 105000.00 | 690463.54 | 1456 |
| 31-03-2023 | | 918010018620123:Int.Pd:01-01-2023 to 31-03-2023 | | 65338.00 | 755801.54 | 2738 |
| | | **TRANSACTION TOTAL** | **134672.00** | **227146.20** | | |
| | | **CLOSING BALANCE** | | | **755801.54** | |

Unless the constituent notifies the bank immediately of any discrepancy found by him/her in this statement of Account, it will be taken that he/she has found the account correct.

The closing balance as shown/displayed includes not only the credit balance and / or overdraft limit, but also funds which are under clearing. It excludes the amount marked as lien, if any. Hence the closing balance displayed may not be the effective available balance. For any further clarifications, please contact the Branch.

We would like to reiterate that, as a policy, Axis Bank does not ask you to part with/disclose/revalidate of your iConnect passord,login id and debit card number through emails OR phone call Further,we would like to reiterate that Axis Bank shall not be liable for any losses arising from you sharing/disclosing of your login id, password and debit card number to anyone. Please co-operate by forwarding all such suspicious/spam emails, if received by you, to customer.service@axisbank.com

With effect from 1st August 2016, the replacement charges for Debit card and ATM card applicable on Current accounts have been revised. To know more about the applicable charges,please visit www.axisbank.com

Deposit Insurance and Credit Guarantee Corporation (DICGC) insurance cover is applicable in all Banks' deposits, such as savings, current, fixed, recurring etc* up to maximum amount of Rs 5 Lakh including principal & interest both* (* or exceptions and details please refer www.dicgc.org.in )

In compliance with regulatory guidelines, the non-CTS cheque books attached to the accounts would be destroyed in banks core banking System. Thus, Non CTS cheques will not be valid for CASH, Clearing and Transfer transactions

REGISTERED OFFICE - AXIS BANK LTD,TRISHUL,Opp. Samartheswar Temple, Near Law Garden, Ellisbridge, Ahmedabad . 380006.This is a system generated output and requires no signature.

BRANCH ADDRESS - AXIS BANK LTD, VANASTHALIPURAM HYD TG, DOOR NO 5-5-1189, SY NO.15(P), PLOT NO 2/A & 3/B, SAHEB NAGAR, KURD,HAYATHNAGAR(M), LB NAGAR CIRCLE III, 500070, HYDERABAD, TELANGANA, INDIA, TEL:040-24113411 FAX:

PRINCIPAL
Avanthi Institute of Engg. & Tech
Guntihapally (V), Abdullapurmet (Mdl) R.R.Dist

**Legends :**

| | | |
|---|---|---|
| ICONN | - | Transaction trough Internet Banking |
| VMT-ICON | - | Visa Money Transfer through Internet Banking |
| AUTOSWEEP | - | Transfer to linked fixed deposit |
| REV SWEEP | - | Interest on Linked fixed Deposit |
| SWEEP TRF | - | Transfer from Linked Fixed Deposit / Account |
| VMT | - | Visa Money Transfer through ATM |
| CWDR | - | Cash Withdrawal through ATM |
| PUR | - | POS purchase |
| TIP/ SCG | - | Surcharge on usage of debit card at pumps/railway ticket purchase or hotel tips |
| RATE.DIFF | - | Difference in rates on usage of card internationally |
| CLG | - | Cheque Clearing Transaction |
| EDC | - | Credit transaction through EDC Machine |
| SETU | - | Seamless electronic fund transfer through AXIS Bank |
| Int.pd | - | Interest paid to customer |
| Int.Coll | - | Interest collected from the customer |

**++++ End of Statement ++++**

PRINCIPAL
Avanthi Institute of Engg. & Tech
Guntihapally (V), Abdullapurmet (Mdl) R.R.Dist

AXIS BANK

**AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**
Joint Holder :- -
GUNTHAPALLY VILLAGE, HAYATH NAGAR
MANDAL RANGA REDDY DIST
HYDERABAD
TELANGANA-INDIA
501512

Customer ID :879983002
IFSC Code :UTIB0002738
MICR Code :500211055
Nominee Registered : N

Registered Mobile No :XXXXXX5659
Registered Email ID:
Scheme :SB-TRUST/SOCIETY/NGO/GOVT

PAN :AAATA3530B

**Statement of Axis Account No :918010018620123 for the period (From : 23-03-2023 To : 24-03-2023)**

| Tran Date | Chq No | Particulars | Debit | Credit | Balance | Init. Br |
|---|---|---|---|---|---|---|
| | | **OPENING BALANCE** | | | **8624514.34** | |
| 23-03-2023 | | IFT/0123032312848/10 | 2516000.00 | | 6108514.34 | 2738 |
| 23-03-2023 | | REV/918010018620123 | | 251500.00 | 6360014.34 | 2738 |
| 23-03-2023 | | AVANTHI INST OF ENG & TECH - 05 21.03 to 22.03.23 | | 176100.00 | 6536114.34 | 274 |
| 24-03-2023 | | NEFT/0123032312868/3 | 363797.00 | | 6172317.34 | 2738 |
| 24-03-2023 | | IFT/0123032312868/1 | 6580.00 | | 6165737.34 | 2738 |
| 24-03-2023 | | NEFT/0124032313430/2 | 287973.00 | | 5877764.34 | 2738 |
| 24-03-2023 | | IFT/0124032313320/6 | 1506000.00 | | 4371764.34 | 2738 |
| 24-03-2023 | | TRF/MINDWAVE INFORMATICS/ | | 75000.00 | 4446764.34 | 58 |
| 24-03-2023 | | AVANTHI INST OF ENG & TECH - 05 23.03.23 | | 13000.00 | 4459764.34 | 274 |
| | | **TRANSACTION TOTAL** | **4680350.00** | **515600.00** | | |
| | | **CLOSING BALANCE** | | | **4459764.34** | |

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REGISTERED OFFICE - AXIS BANK LTD,TRISHUL,Opp. Samartheswar Temple, Near Law Garden, Ellisbridge, Ahmedabad . 380006.This is a system generated output and requires no signature.

BRANCH ADDRESS - AXIS BANK LTD, VANASTHALIPURAM HYD TG, DOOR NO 5-5-1189, SY NO 15(P), PLOT NO 2/A & 3/B, SAHEB NAGAR, KURD,HAYATHNAGAR(M), LB NAGAR CIRCLE III, 500070, HYDERABAD, TELANGANA, INDIA, TEL:040-24113411 FAX:

**Legends :**

ICONN - Transaction trough Internet Banking
VMT-ICON - Visa Money Transfer through Internet Banking
AUTOSWEEP - Transfer to linked fixed deposit

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REV SWEEP - Interest on Linked fixed Deposit
SWEEP TRF - Transfer from Linked Fixed Deposit / Account
VMT - Visa Money Transfer through ATM
CWDR - Cash Withdrawal through ATM
PUR - POS purchase
TIP/ SCG - Surcharge on usage of debit card at pumps/railway ticket purchase or hotel tips
RATE.DIFF - Difference in rates on usage of card internationally
CLG - Cheque Clearing Transaction
EDC - Credit transaction through EDC Machine
SETU - Seamless electronic fund transfer through AXIS Bank
Int.pd - Interest paid to customer
Int.Coll - Interest collected from the customer

**++++ End of Statement ++++**

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AXIS BANK

**AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**

Joint Holder :- -

GUNTHAPALLY VILLAGE, HAYATH NAGAR
MANDAL RANGA REDDY DIST
HYDERABAD
TELANGANA-INDIA
501512

Customer ID :879983002
IFSC Code :UTIB0002738
MICR Code :500211055
Nominee Registered : N

Registered Mobile No :XXXXXX5659
Registered Email ID:
Scheme :SB-TRUST/SOCIETY/NGO/GOVT

PAN :AAATA3530B

**Statement of Axis Account No :918010018620123 for the period (From : 08-11-2022 To : 10-11-2022)**

| Tran Date | Chq No | Particulars | Debit | Credit | Balance | Init. Br |
|---|---|---|---|---|---|---|
| | | **OPENING BALANCE** | | | **1454923.24** | |
| 09-11-2022 | 40714 | SAK/CASH WDL/SAK316574924/2738/VANASTHAL/SELF | 900000.00 | | 554923.24 | 2738 |
| 09-11-2022 | | NEFT/N313222199049788/AUTHBRIDGE RESEARCH SERVICE | | 300.00 | 555223.24 | 248 |
| 09-11-2022 | | IFT/0109112216803/6 | 149524.00 | | 405699.24 | 2738 |
| 09-11-2022 | | NEFT/0109112216803/3 | 53333.00 | | 352366.24 | 2738 |
| 09-11-2022 | | AVANTHI INST OF ENG & TECH - 05 07.11 to 08.11.22 | | 112000.00 | 464366.24 | 274 |
| 10-11-2022 | | NEFT/0110112223894/1 | 178942.00 | | 285424.24 | 2738 |
| 10-11-2022 | | TRF/SASHAKT HR SERVICES PVT. LTD./ | | 75000.00 | 360424.24 | 3315 |
| 10-11-2022 | | AVANTHI INST OF ENG & TECH - 05 09.11.22 | | 100500.00 | 460924.24 | 274 |
| | | **TRANSACTION TOTAL** | **1281799.00** | **287800.00** | | |
| | | **CLOSING BALANCE** | | | **460924.24** | |

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REV SWEEP - Interest on Linked fixed Deposit

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| | | |
|---|---|---|
| SWEEP TRF | - | Transfer from Linked Fixed Deposit / Account |
| VMT | - | Visa Money Transfer through ATM |
| CWDR | - | Cash Withdrawal through ATM |
| PUR | - | POS purchase |
| TIP/ SCG | - | Surcharge on usage of debit card at pumps/railway ticket purchase or hotel tips |
| RATE.DIFF | - | Difference in rates on usage of card internationally |
| CLG | - | Cheque Clearing Transaction |
| EDC | - | Credit transaction through EDC Machine |
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**++++ End of Statement ++++**

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AXIS BANK

**AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**

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HYDERABAD
TELANGANA-INDIA
501512

Customer ID :879983002
IFSC Code :UTIB0002738
MICR Code :500211055
Nominee Registered : N

Registered Mobile No :XXXXXX5659
Registered Email ID:
Scheme :SB-TRUST/SOCIETY/NGO/GOVT

PAN :AAATA3530B

**Statement of Axis Account No :918010018620123 for the period (From : 20-03-2023 To : 21-03-2023)**

| Tran Date | Chq No | Particulars | Debit | Credit | Balance | Init. Br |
|---|---|---|---|---|---|---|
| | | **OPENING BALANCE** | | | **14443531.34** | |
| 20-03-2023 | | AVANTHI INST OF ENG & TECH - 05 18.03 to 19.03.23 | | 59000.00 | 14502531.34 | 274 |
| 21-03-2023 | | NEFT/0120032323548/27 | 688761.00 | | 13813770.34 | 2738 |
| 21-03-2023 | | NEFT/0120032323610/37 | 317356.00 | | 13496414.34 | 2738 |
| 21-03-2023 | | IFT/0120032323610/12 | 111909.00 | | 13384505.34 | 2738 |
| 21-03-2023 | | IFT/0120032323548/99 | 2905291.00 | | 10479214.34 | 2738 |
| 21-03-2023 | | REV/918010018620123 | | 27300.00 | 10506514.34 | 2738 |
| 21-03-2023 | | IFT/0121032312372/8 | 2008000.00 | | 8498514.34 | 2738 |
| 21-03-2023 | | TRF/MANAC INFOTECH PVT. LTD./ SRINIVAS | | 215000.00 | 8713514.34 | 133 |
| 21-03-2023 | | AVANTHI INST OF ENG & TECH - 05 20.03.23 | | 126000.00 | 8839514.34 | 274 |
| | | **TRANSACTION TOTAL** | **6031317.00** | **427300.00** | | |
| | | **CLOSING BALANCE** | | | **8839514.34** | |

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| | | |
|---|---|---|
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| SWEEP TRF | - | Transfer from Linked Fixed Deposit / Account |
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