STUDENT PROJECTS SCHEME

Proposals invited for 2024-2025

FORMAT FOR STUDENT PROJECT PROPOSAL

1.	Name of the Student(s)	:	ABIVARSHNI K P , VISHNU PRASATH D , JAYANTHAA S T .
	One valid e-mail id	:	eeevishnuprasath@gmail.com
2.	Name of the Guide	:	MRS.C.CHITRA
	Designation	:	ASSISTANT PROFESSOR
	Institutional Address	:	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY, THINDAL, ERODE-638012, TAMILNADU.
	PhoneNo. &Mobile No.	:	88700 45682 , 9360304308
3.	Project Title	:	ENHANCING SAFETY : STRATEGIES FOR ACCIDENT DETECTION AND PREVENTION
4	Sector in which your Project proposal list to be Considered	:	

5   Project Details

: 1. Introduction
2. Objectives
3. Methodology   **(Item No. 1 to 6**
4. Work Plan   **attached at the end)**
5. Budget
6. Any other details

7.   Has a similar project been carried out   :   NO
in your college/ else where? If so
furnish details of the previous project
and high light the improvements
suggested in the present one

CERTIFICATE

This is to certify that **ABIVARSHNI K P [732921EER004] , VISHNU PRASATH D [732921EER060] , JAYANTHAA S T [732921EER025]**are bonafide final year students of U.G. Engineering courses of our college and it is also certified that two copies of utilization certificate and final report along with seminar paper will be sent to the Council after completion of the project by the end of May 2025.

Signature of the Guide   Signature of the HOD   Signature of the Principal/
                                                                    Head of the Institution

N.B.: **1 copy**of the proposals are to be submitted through proper channel to **The Member Secretary,TNSCST, DOTE Campus, Chennai - 600 025**   on   or before **13 SEPTEMBER 2024, 5 pm.**

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DOTE Campus, Chennai- 00025

STUDENT PROJECTS SCHEME

CLASSROOM MONITORING SYSTEM USING MACHINE LEARNING

1. Introduction

Our Classroom Monitoring System, powered by Machine Learning, aims to enhance classroom management and student engagement. This system will detect the faculty member's presence inside the class room as well student's activity. Many features, are combined with real-time tracking of attendance and engagement, provide a comprehensive solution for modern classrooms. However, privacy and ethical considerations are essential for responsible use.
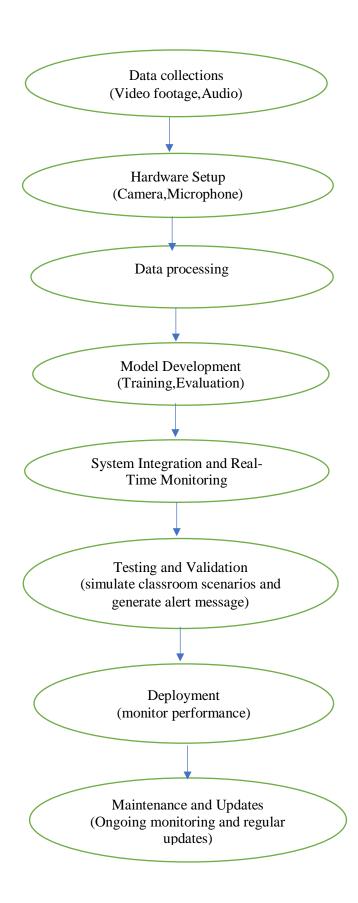
2. Objectives

- Faculties and student class room monitoring capability.
- Voice and activity monitoring capability.
- Regular notification to the higher officials regarding class scenario.

3. Methodology

- **Setup**: Install cameras and microphones to monitor classroom activities.
- **Data Collection**: Capture visual and audio data to detect staff presence and noise levels.
- **Model Training**: Develop models to identify staff and trigger alerts for excessive noise.
- **Real-Time Monitoring**: Implement continuous monitoring with instant alerts.
- **Testing**: Validate the system's accuracy in various scenarios.
- **Privacy**: Ensure compliance with privacy and ethical standards.

4. Work Plan

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        ┌─────────────────────────┐
        │   Data collections      │
        │  (Video footage,Audio)  │
        └─────────────────────────┘
                    │
                    ▼
        ┌─────────────────────────┐
        │     Hardware Setup       │
        │   (Camera,Microphone)    │
        └─────────────────────────┘
                    │
                    ▼
        ┌─────────────────────────┐
        │     Data processing      │
        └─────────────────────────┘
                    │
                    ▼
        ┌─────────────────────────┐
        │    Model Development      │
        │   (Training,Evaluation)   │
        └─────────────────────────┘
                    │
                    ▼
        ┌───────────────────────────────┐
        │ System Integration and Real-   │
        │      Time Monitoring           │
        └───────────────────────────────┘
                    │
                    ▼
        ┌──────────────────────────────────────┐
        │       Testing and Validation          │
        │ (simulate classroom scenarios and     │
        │     generate alert message)           │
        └──────────────────────────────────────┘
                    │
                    ▼
        ┌─────────────────────────┐
        │       Deployment         │
        │  (monitor performance)   │
        └─────────────────────────┘
                    │
                    ▼
        ┌───────────────────────────────────┐
        │     Maintenance and Updates        │
        │ (Ongoing monitoring and regular    │
        │            updates)                │
        └───────────────────────────────────┘
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5. Budget

CATEGORY	ESTIMATED COST
HARDWARE COSTS	
Cameras (2-4 units)	Rs.1,200
- Microphones (2-4 units)	Rs.400
- Computer/Server	Rs.2,500
- Miscellaneous	Rs.600
Subtotal	**Rs.4,500**
SOFTWARE TOOLS	
- ML Software	Rs.2,000
- Data Storage	Rs.500
- Development Tools	Rs.200
Subtotal $100 - $1,700	**Rs.2,700**
TESTING AND VALIDATION	
- Testing Equipment & Tools	Rs.800
- Test Runs and Data	Rs.1,000
Subtotal	**Rs.1,800**
CONTINGENCY	**Rs.4,800**
MISCELLANEOUS	
- Documentation & Reporting	Rs.2,000
- Training and Support	Rs.2,000
Subtotal	**Rs.4,000**
Total Estimated Budget	**Rs.17,800**