Appendix G

SASI INSTITUTE OF TECHNOLOGY & ENGINEERING
AUTONOMOUS
TADEPALLIGUDEM
WEST GODAVARI DISTRICT

Department of Computer Science & Engineering

Academic Year 2025-26
IV B. Tech I Semester Project work
B. Tech Project Proposal

Name of the Supervisor: Dr. P. Sivakumar, Professor

I. Project Group Details:

S.No	Batch Code	Register No	Name of the Student	E- Mail Id	Contact Number
1	22CSEA17	22K61A05F9	Talam Raghu Ram		
2		22K61A0522	Chaturya Venkata Sai Sree Palli		
3		22K61A0548	Gubbala Srivalli		
4		22K61A0539	Gedda Naga Siva Yaswanth		

Tentative Title: AI-Powered Attendance Monitoring System Using Face Recognition

(Should be specific, clear, and reflect the main theme/problem)

Domain / Sub Domain : Artificial Intelligence / Computer Vision

Area of the Project : Smart Campus Solutions

II. Brief Description of the Project

1. Problem Statement:

Manual attendance systems are time-consuming, error-prone, and vulnerable to proxy attendance. There is a need for a robust, automated, and contactless solution that ensures accurate attendance tracking in classrooms.

2. Objective: List 3–5 SMART objectives (Specific, Measurable, Achievable, Relevant, Time-bound). Use To action verbs such as to design, to implement, to evaluate etc.,

1. To design a facial recognition model using deep learning for identifying students in real-time.
2. To implement a web-based dashboard for managing attendance data and visualizing reports.
3. To evaluate the system performance in terms of accuracy, false positives, and speed under different lighting and seating conditions.

3. Scope of the Project (Define the boundaries – what will be covered and what is excluded.)

Covered:

- *Implementation of a face detection and recognition algorithm (e.g., MTCNN, FaceNet).*
- *Real-time image capture through webcam/CCTV.*
- *Attendance marking with time-stamping.*
- *Web interface for faculty/staff to view/download reports.*

Excluded:

- *Large-scale multi-campus deployment.*
- *Offline facial recognition using mobile apps.*
- *Voice-based or multi-modal biometric integration.*

4. Proposed Methodology of Solution:

- ✓ **Dataset Collection**: Use public datasets (e.g., LFW) and create a custom dataset of enrolled students.
- ✓ **Model Training**: Use CNN (e.g., MobileNetV2 or FaceNet) for face detection and recognition.
- ✓ **Backend Development**: Flask/Django for data management and API services.
- ✓ **Frontend Dashboard**: HTML/CSS + React for displaying attendance analytics.
- ✓ **Real-time Capture:** Integrate OpenCV with webcam or IP camera for live detection.

5. Tools / Technologies to be used:

- ✓ Python, OpenCV, TensorFlow/Keras
- ✓ Flask or Django (Backend)
- ✓ SQLite/MySQL (Database)
- ✓ HTML, CSS, React (Frontend)
- ✓ GitHub for version control

6. Expected Program Outcome:

- ✓ Deployment-ready smart attendance system with real-time monitoring
- ✓ Higher accuracy and reduced manual intervention
- ✓ Useful analytics (latecomers, defaulters, monthly reports) for academic administrators

7. Significance / Societal Relevance: (Explain how this project impacts society, industry, or research.)

This system offers a non-contact, hygienic, and automated alternative to manual and fingerprint-based attendance systems, making it highly relevant in the post-pandemic world. It ensures transparency and prevents time fraud in institutions and companies. It also promotes digitization in education and human resource management, aligning with the vision of Digital India and Industry 4.0 initiatives.

III. Time Line for the Period (Semester week number):

Activity	Period (Refer Project Calendar)
Title Confirmation	W1
Literature Survey	W2-3
Gap Identification	W4
Problem Formulation	W5
Survey Paper Publication	W6-7
Design	W8-9
Methodology	W10
Implementation	W11-13
Results	W24
Documentation	W15-16
Publication	W17-18

---Attach Ghant Chart

IV. Project Classification:

Type of the Project: Application + Research
(Application, product, research, review etc,)

V. Quality of the project:

S.No	Quality Parameter	Description
1	Environment Safety	Non-invasive, non-contact, and energy-efficient camera setup
2	Ethics	Consent-based data collection and secure data handling practice
3	Cost effective	Uses open-source tools and affordable hardware
4	Application	Practical use in educational institutes for automating attendance

VI. Project (title)-Program Outcomes (POs) Relationship Matrix (Indicate the relationships by mark "X")

Project Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1. Develop problem formation and design skills for engineering and real-world problems.	x		x									x
2. Collect and Generate ideas through literature survey on current research areas		X								x		x
3. Import knowledge on software & hardware to meet industry perspective needs and standards.	x		x	x	x						x	
4. Create interest to carry out research on innovative ideas as a lifelong learning.												x
5. Ability to work with team and enrich presentation and communication skills.									x	x		
6. Create a platform that makes students employable.			x		x							x

Program Educational Objectives (PEOs)-Course Outcomes Relationship Matrix (Indicate the relationships by mark "X")

Project Outcomes	PSO1	PSO2
1. Develop problem formation and design skills for engineering and real-world problems.	x	
2. Collect and Generate ideas through literature survey on current research areas	x	x
3. Import knowledge on software & hardware to meet industry perspective needs and standards.	x	x
4. Create interest to carry out research on innovative ideas as a lifelong learning.	x	
5. Ability to work with team and enrich presentation and communication skills.		x
6. Create a platform that makes students employable.	x	x

Signature of the Supervisor

DPRC Comment:

Signature of DPRC Member1 DPRC Member2 DPRC Member3

(Supervisor and DPRC members are requested to review the content and confirm your approval with signatures)

Signature of the HOD

Tadepalligudem. Date: _____