Mepco Schlenk Engineering College , Sivakasi
Autonomous
Department of Artificial Intelligence and Data Science

Fortnight's Report

Date of Submission: 20/01/2025

Fortnight Period: 22/12/2024 – 11/01/2025

Project Title: **Integrating Deep Learning for Safety Management in Construction: Semantic Image-Rule Matching for Unsafe Behavior Detection Using YOLO-ESCA.**

Project Guide: **Dr.P.Swathika, ME, PhD, Assistant Professor AI&DS Department.**

Name of the Students with Register Numbers:

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Activities Done:

- A conference paper was prepared for our project utilizing YOLO ASCA.
- A performance comparison between YOLO ASCA and YOLO V11 was conducted.
- The number of training epochs for YOLO ASCA was increased as part of the optimization process.

Constraints faced:

- YOLO-ASCA faced challenges from an imbalanced dataset, causing biased detection.
- Detecting small or occluded objects like helmets required added enhancements.

Intermediate deliverables:

- A comparative analysis of YOLO-ASCA and YOLOv11 highlighted improvements in precision and mAP.
- Enhanced features like EIOU loss and small-target detection layers improved accuracy.

Signature of the Guide with Date:

Signature of the Project Coordinator with Date: