**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:

**Abishek S (9517202109005)**

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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:**