INDUSTRIAL SAFETY GEARS DETECTION USING MACHINE LEARNING

WORK LOG 1 : PROJECT SETUP

TASKS :

On the first day of the "Industrial Safety Gears Detection using ML (YOLOv8 model)" project, I focused on defining the project's objectives and scope. This involved outlining the main goals, such as accurately detecting various types of industrial safety gear—helmets, gloves, vests, and goggles—using machine learning techniques.Additionally, I set up a GitHub repository to facilitate version control and collaboration. This repository will serve as the central hub for all project-related files, including code, documentation, and datasets. Setting up the repository involved creating a README file to describe the project and its objectives, as well as organizing the initial directory structure for better file management.

PROGRESS :

During the day, I dedicated time to researching existing models and libraries relevant to my project. This included reviewing various machine learning frameworks, particularly those specializing in object detection, such as YOLO (You Only Look Once), Faster R-CNN, and SSD (Single Shot MultiBox Detector). I explored the strengths and weaknesses of each model, with a particular focus on YOLOv8 due to its reputation for speed and accuracy. By the end of the day, I compiled a list of resources, papers, and documentation that would support my understanding of the YOLOv8 model and how to implement it effectively.

CHALLENGES :

I faced no significant challenges on the first day. The tasks were straightforward, and I was able to define the project scope and set up the necessary tools without any technical difficulties. However, I acknowledged that the real challenges would likely arise as I progressed, particularly in data collection and model training.

NEXT STEPS :

The immediate next step is to gather datasets of industrial safety gear. I plan to search for publicly available datasets, such as those provided by universities, organizations focused on safety equipment, or other research institutions. If necessary, I may also consider creating a custom dataset by collecting images from various industrial environments, ensuring that the dataset is diverse and representative of different safety gear types. This foundational work is crucial, as the quality and quantity of data will directly influence the model's performance in detecting safety gear in real-world scenarios.

Overall, Day 1 laid a solid foundation for the project, setting clear goals and establishing a plan for data collection that will be critical in the upcoming phases.