Regardless of the high effort of Pedestrian Protection System (PPS) research for the passenger vehicles, construction machinery remains overlooked. One of the main construction fatality causes comes from an operator. Our goal to recognize workers who potentially have an accident near the vehicle from the top. After analysing perception data, we should provide an active safety warning to the operator.

**Tasks**
- Analyze the state of the art in construction safety, vision-based object recognition, automatic zoom camera, etc.
- Analyze and generate safety/risk assessment from perception data.
- Design an appropriate object recognition approach which suits the construction environment such as data-driven or deep learning object detection/tracking.
- Implement, test, and evaluate the chosen approach.

**Requirements**
- Interest in robotics.
- Knowledge of C++ (or object-oriented languages, e.g. Java)
- Knowledge of Game Engine e.g. Unreal Engine is a plus

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