CS491 - Fall 2026

Project Information Form

Email *

perhat.amanlyyev@ug.bilkent.edu.tr

Name of the Project *

OmniVision

One paragraph description of the project *

We are developing an industrial vision platform that transforms operators' monitoring requests in natural language into workflows coordinated by an agentic orchestration layer. This layer dynamically selects and combines reusable skills such as detection, tracking, and event recognition, and manages agents responsible for planning, reviewing, feedback, annotation, and communication between components. As industrial cameras capture footage, vision-language models analyze relevant frames in real time manifested by operator's input. The platform matches task requirements to available capabilities, selects models according to current hardware resources, and coordinates data retrieval, annotation, automated fine-tuning, and validation when capabilities are missing. Operator approval and feedback memory guide execution and adaptation to changing requirements, reducing manual monitoring and custom development effort.

Supervisor Name and Lastname: *

Doruk Öner

Innovation Expert Name and Lastname: *

Doruk Öner

The URL of the Project Web Page: *

Home · OmniVision

Team Member 1 StudentID,Name,Surname: *

22203024, Altay İlker, Yiğitel

Team Member 2 StudentID,Name,Surname: *

22202238, Barış, Pamuksuz

Team Member 3 StudentID,Name,Surname: *

22203114, Emiralp, İlgen

Team Member 4 StudentID,Name,Surname: *

22201895, Mustafa Mert, Gülhan

Team Member 5 StudentID,Name,Surname: *

22201007, Perhat, Amanlyyev