



# Student Topic: Semantic Monitoring and Copilot for Test drives

In this project we dive into the automotive industry by developing a platform that monitors test drives. The actual task is to develop applications that take e.g., the video-feed from a camera installed in a car and interpreting the data using traditional algorithms or machine learning. Example apps could be: weather detection, pedestrian detection, digit detection on the dashboard of the car, traffic signs detection and more. Also different multimodal sensoric inputs can be used e.g., a accelerometer, gyrometer, light sensors or microphones. This project is a collaboration of Pro2Future, TU Graz and AVL, hence could lead to possible further job opportunities.

## Goal and Tasks:

- Implement a specific application in the ROS2 framework: Pedestrian detection, maneuver detection, anomaly detection, etc.
- Research on state-of-the-art techniques for this specific problem, and compare and evaluate them.

## Recommended Prior Knowledge:

- Basic programming skills, such as Python, C, or C++.
- Basic skill with AI/ML models and frameworks, e.g., Keras, PyTorch, TensorFlow, Scikit-learn, XGBoost.
- Optional: Experience with ROS2

**Start: a.s.a.p.**

**Duration in months: 6-12 months**

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