Do you want to gain practical experience while working on your diploma thesis? We are happy to support you with our know-how and experience while working on innovative challenges in autonomous driving and driver assistance within a highly motivated team of experts.

emotion3D is a leading expert in computer vision & machine learning solutions in the field of automotive industry. We offer a research opportunity for the following Diploma thesis topic:

Diploma Thesis: Detection & spatial analysis of vulnerable road users based on multi-modal sensors

The reliable detection of vulnerable participants (e.g., pedestrians, two-wheelers) in road traffic is an important social goal and a demanding technical challenge, which is currently particularly in poor visibility conditions (night, fog), on far distances (>100m) and when approaching from the side (intersection situations) still insufficiently resolved. Through a combination of imaging and range sensors and an intelligent perception system analyzing those modalities both the presence and intention of vulnerable participants can be perceived and integrated in a holistic environmental perception approach. The objective of this thesis is to use state-of-the art deep learning networks for the detection and spatial analysis of vulnerable participants by processing multi-modal sensor data, optimize them for the target environment and analyze its performance in reproducible test scenarios.

This thesis project consists of the following aspects:
- Research on state-of-the-art methods for multi-modal detection and spatial analysis of vulnerable road users
- Object recognition by means of fused sensor technology
- Integration of scene geometries
- Scene interpretation by means of evaluating the pose of vulnerable road users
- Evaluation of the implemented approach on real world data

Your profile:
- Good knowledge in Deep Learning
- Good knowledge in image analysis and computer vision
- Strong programming skill in Python (Tensorflow)
- Strong analytical and problem solving skills
- Committed to work minimum 25 hours per week on your thesis project

This thesis offers you an excellent opportunity to get deep into the hot topic of Deep Learning. It allows you to become an expert in developing, analyzing, and evaluating neural networks. Moreover, you acquire critical skills in using neural networks on resource constraint systems.

You are interested? Please send us your application! We are looking forward to meeting you!

Florian Seitner   www.emotion3d.ai
+43 699 8192 4912   **career@emotion3d.ai**

emotion3D GmbH
Rainergasse 1/8
A-1040 Wien, Austria

career@emotion3d.ai
www.emotion3d.ai

T   +43 1 293 32 63
F   +43 1 293 32 63