Master Thesis 2018: Camera Based Friction Estimation

NIRA Dynamics AB develop innovative software-based functions to the global vehicle industry. The current flagship is the Tire Pressure Indicator (TPI), which is the market-leading indirect tire pressure monitoring system currently activated in more than 35 million vehicles worldwide. TPI uses signals already available in the vehicle, and detects based on this information if one or more tires are under-deflated. The computations are based on vehicle models and numerous advanced signal processing and sensor fusion algorithms. Other products are now also emerging, like the NIRA Tire Grip Indicator (TGI) mainly driven by vehicle connectivity and autonomous driving.

Are you into image analysis and machine learning algorithms....

... then we have a challenging problem for you to investigate! Using Convolutional Neural Networks (CNN) or some other method of your preference, you should develop, implement and evaluate an algorithm for friction classification (good grip, medium grip, low grip) with video images as input only.

The work assumes good knowledge in signal processing and image analysis. Algorithms will be developed in Python with the use of TensorFlow™. Appropriate educational background is studying at a Master programs with specialization D, E, F, Y, Z, or equivalent with a strong focus on signal processing, sensor fusion, machine learning or image analysis. We expect you to have excellent study results (average 4 or higher) and that you are driven and can take initiative and work independently. The project will be carried out at our head office in Linköping.

If you are interested in the above M.Sc. project, please send a personal letter written in English including a course listing with grades to Head of Pre-Development, thomas.svantesson@niradynamics.se. Earliest expected start-date is January, 2018.

Visit www.niradynamics.se for more information about NIRA Dynamics AB!