Signal-filtration methodology for estimation of fuel level - (3042)

Target group: Automotive Engineering

At Research and Development you will be a key contributor to the next generation outstanding luxury cars from Volvo. Together with other engineers around the world, you and your team will create innovative human-centric car technology that makes life less complicated and more enjoyable for people. Are you interested in design and connected car technology? Do you share our passion for people, the environment and our urge to create a superior driving experience? Research and Development is the place for you to prosper.

This thesis work will be carried out within the Fuel System department in close collaboration with the Driver Information group, which are part of VCC’s Research and Development organization.

Fuel systems consists of 50 employees, all dedicated to develop a competitive solution for future cars in a stimulating working atmosphere. The fuel system department is responsible for fuel storage, refueling, fuel level indication and delivering fuel to the engine. The department also develops systems driven by legal requirements such as the EVAP and leakage diagnostic systems for hydrocarbon emission control.

Driver Information consists of 20 employees, and is responsible for developing the Instrument Cluster, The Head Up Display and the Center Stack Screen as well as Driver Information functions such as Trip Computer and Fuel Level Indication.

Scope

The purpose of this thesis is to evaluate different filtration methods of noisy fuel level signals in order to provide a robust estimation of the fuel level. Within the context of method evaluation, factors that affect and disturb the fuel level estimation shall be considered.

A significant part of the thesis will rely on verifying and validating the selected methods. Initially this will be performed through simulation.

In order to support you during your work you will have access to Volvo’s test equipment and several system teams. The test results will require thorough analysis and validation and you will give recommendations for future development of the fuel level estimation.

Detailed description of thesis work:

- Evaluate different signal-filtering strategies and methods
- Analyze the advantages and disadvantages of the selected methods
• Develop/model a signal-filtration method based on above steps
• Verify and validate the developed model
• Make refinements and adjustments based on verification and validation results

Profile
• We are looking for students that are highly motivated and have genuine interest in cars, calculations and product development.
• M.Sc. in software engineering or similar with good knowledge in control theory
• Matlab and Simulink experience
• Driver’s license B
• Knowledge within combustion engine is meritorious.
• Communication skills are important since information will be needed from several different parts of the company.

Duration
• Period: 1 semester, 30 ECTS points
• Starting date: January 2018
• Number of students: Suitable for 1-2 student.
• Work to be done at dep 97481 Powertrain Mount, Volvo Car Corporation, Gothenburg (Torslanda)

Application
• Attach your resume and cover letter stating your interests within the given area and your thoughts and credentials.
• Please note that applications arriving later than the last application date will not be taken in consideration.
• Selection will be ongoing during the application period.

In case of questions, please contact:
Aid Mujanovic aid.mujanovic@volvocars.com tel +46 31 591235
Andreas Olsson andreas.olsson.3@volvocars.com tel +46-31-595106

Apply at www.volvocars.com/career

We want your application as soon as possible, but no later than 2017-11-30.

About Volvo Car Group
The future belongs to those who are empowered by a great idea and have the ability to carry it out. At Volvo Car Group, our vision is clear: "To be the world's most progressive and desired premium car brand" by simplifying people's lives. We have bold targets when it comes to innovation, sales and customer satisfaction and to make this happen, we need talented people onboard. People with passion, energy, business sense and the drive to innovate. People that want to create the next generation Volvo cars in a global, dynamic and respectful environment. We will support you to reach your full potential. Join us on this exciting journey into the future.