

INFOTIV

INSTANT INNOVATION

THESIS PROPOSAL

Advanced Engineering Package for Autonomous Platform



KEYWORDS:

Autonomous Platform, Electronics, Autonomous Drive, Embedded Development, Embedded Systems

TARGETED PROGRAMS:

Electrical Engineering, Automation & Mechatronics Engineering

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PURPOSE OF THE STUDY

To increase the knowledge and expertise within the evolving automotive industry, Infotiv Technology Development AB developed the open and educational Autonomous Platform. It is currently in its fourth iteration (AP4) and the goal of the platform is to have an autonomous gokart that can be used to progress research and development in the automotive industry. This thesis aims to continue the development of a selected technical area of AP4. The following topics are suggested:

- Introducing ML autonomous drive module
- Exploring Autonomous Vehicle software stacks such as Openpilot, Apollo, Autoware, Nvidia Drive
- Adding new functionalities and sensors such as gated lidar/camera and enabling SLAM
- Improving the verification and validation process
- Introducing CI/CD
- Build HIL/SIL testing facilities

Potential research questions:

- Real time systems in centralized E/E Architecture
- Gated2Depth: Real-Time Dense Lidar from Gated Images
- Verification and validation of complex embedded system

WHO ARE WE LOOKING FOR?

We are looking for 2 students with a background in mechatronic, electrical engineering, or equivalent program, who wish to conduct their thesis during the spring of 2024. Applicants shall have experience in electrical engineering, software development and an interest in learning more about test automation. Applicants shall also have experience from programming languages such as C++ or Python, and it is meritorious to have previous experience from or knowledge of Continuous Integration, Delivery or Deployment, Jenkins, Git, Test Automation and Frontend development.

ABOUT US

TechDev is a department at Infotiv who focuses on SW & HW development and test solutions. We currently consist of 70 technical consultants with diverse backgrounds and experience from many technological fields. Our employees use their expertise to provide tailored solutions to all kinds of challenges, ranging from SW development, machine learning and simulations, to project & test management and way of working. One of our key strengths is the friendly atmosphere in our technical community, which provides access to TechDev's collective knowledge through internal collaboration tools and competence leader program, continuously providing updates in the latest tech.

HOW TO APPLY

Apply for this thesis via [<https://www.infotiv.se/karriar>] no later than 2023-11-21. Assure to attach your resumé and a short summary of why you want to partake in this thesis.

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