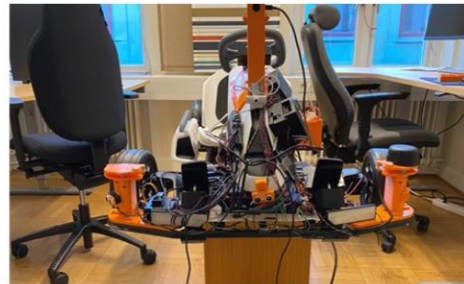


INFOTIV

INSTANT INNOVATION

THESIS PROPOSAL

Autonomous Platform: Next Generation Gokart.



KEYWORDS:

Embedded software, Automotive, Vehicle Networks, CAN, C++, Python, Autonomous Drive, Robotic Operating System, Remote Control

TARGETED PROGRAMS:

Computer Science, Electrical Engineering, Mechatronics Engineering



THESIS PROPOSAL

Autonomous Platform: Next Generation Gokart.

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. The goal of the platform is to have an autonomous gokart that progresses research and development in the automotive industry. Currently, the system is designed in three modules, an Automotive platform that implements the core driving functionality (steering, throttle, and brake) through the CAN. Body electronics include lights, sensors, a horn, and a monitor displaying the platform power mode and a simulated key. Finally, the autonomous drive module runs openpilot for basic driving assistant functionalities using one camera. Please read more about the autonomous platform at <https://infotiv-research.github.io/gokart-documentation/>.

The purpose of the study is to Investigate the possibility of:

- Improving the ECU network and CAN.
- Improving and implementing core driving functionality (steering, throttle, and brake) through Remote Control.
- Improving and implementing core driving functionality through Robotic Operating System (ROS).
- Verification and validation of remote core driving functionality.

WHO ARE WE LOOKING FOR?

We are looking for 2 students with a background in data science, electrical or mechatronics engineering, or engineering physics who wish to conduct their thesis during the spring of 2023. Applicants shall have an Interest in both hardware and software development and a desire to deepen their knowledge in embedded systems design. You shall have experience from programming languages such as C++ or Python, and have basic knowledge of communication protocols such as CAN and LIN.

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 experiences 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 TechDevs 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 [2022-12-31]. Assure to attach your resumé and a short summary of why you want to partake in this thesis.

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