

MASTER THESES AND INTERNSHIPS 2016

Our Master Theses projects require a good knowledge in embedded systems design and/or eclipse-based development. We prefer Master Theses projects handled by two students. Register your interest at <http://www.arccore.com/company/careers/job-application/>. Include CV and your area of interest.

SALES AND MARKETING

1) V2X COMMUNICATION

Evaluate the growing market in Vehicle-2-Vehicle and Vehicle-2-Infrastructure communication, both from a technical and economical point of view.

USER INTERACTION

2) USER INTERACTION IN MODEL BASED DEVELOPMENT

Working with large AUTOSAR models is a tedious task. Good UI design patterns and tools are required to make this work possible. Develop and propose new UI design patterns to enable efficient modelling in ARCCORE's tool suite Arctic Studio.

3) VISUALIZATION OF AUTOSAR MODELS

Working with large AUTOSAR models is a tedious task. Good visualizations of AUTOSAR models are required to make this work possible. Develop and propose visualization techniques for AUTOSAR models that can be integrated into ARCCORE's tool suite Arctic Studio.

WEB TECHNOLOGIES

4) BIG MODELS IN WEB APPLICATIONS

Investigate how modern web frameworks and techniques handle large and complex models and try to find suitable solutions for large AUTOSAR models.

5) AUTOSAR MODELLING ENVIRONMENT ON THE WEB

Investigate and propose suitable techniques for building a web-based modelling environment UI for AUTOSAR development.

6) THE CONNECTED VEHICLE

Evaluate how Arctic Core can be applied to a connected vehicle and create a web services that communicates with the embedded system through Internet.

EMBEDDED PROGRAMMING

7) VIRTUAL AUTOSAR ENVIRONMENT ON LINUX

Running the Arctic Core real-time platform on Linux is a non-trivial task. Investigate how this can be done and what tradeoffs need to be made in order for this to be possible. Develop a proof of concept based on the Arctic Core AUTOSAR stack.

8) SMALL-SCALE PLATFORM

Develop a minimal AUTOSAR system based on Arctic Core that can run on a CPU with limited memory and execution resources.

9) TIME SUPERVISION

Add timing protection to the Arctic Core AUTOSAR real-time stack.

10) AUTOMOTIVE FIREWALL

Investigate how embedded systems in cars can expose data using safe and secure communication protocols leveraging for example certificates to filter the exposed data to only valid clients.

TESTING

11) AUTOMATED TESTING FOR COMPLEX MODELS

Complex models require complex test cases. Develop methods to generate and execute unit tests for tools using complex models.

12) AUTOMATED TESTING OF HARDWARE

Develop and setup an automatic test environment for hardware tests. Evaluate different test strategies for system tests.