

QRTECH is an independent company specialized in product development, industrialization and supply of automotive electronics and software. Our organization and competence masters all phases of development including requirement engineering, electronics and software development, environmental and EMC qualification and manufacturing. Today QRTECH electronics can be found in vehicles made by AB Volvo (Volvo Truck, Volvo Bus, and Volvo CE), BMW, Daimler, Ford, Mack, Renault, Volvo Cars, Jaguar, Land Rover, Mazda, etc. QRTECH facilities are located in Gothenburg with high capability electronics and vehicle labs. Today a large focus in the automotive industry is autonomous cars and machine learning. New powerful methods and solutions including deep learning neural networks are rapidly being developed. There is a large potential to apply these new emerging technologies also in other application areas than automotive, such as autonomous aircraft and in medical technologies.

Master Thesis Proposal: Validating Simulated Data for Automotive Applications

In some applications, it might be difficult to obtain a specific kind of data or it may even be dangerous. For reasons like this, people want to be able to simulate the reality and obtain that data. This data can then be used, for example, train neural networks. But is this acquired data reliable data trustworthy enough to be used for automotive applications?

This thesis would consist of:

- Acquiring simulated data from simulator.
- Designing, constructing and training a Neural Network on the simulated data.
- Validating this neural network on real world data.

Possible extension of the scope:

- Verification methodology for neural networks in terms of functional safety.
- Implementation within other fields, such as the medical field.
- The neural network might be able to predict how the vehicles are most likely to behave.
- Implementation of simpler self navigation.
- At least one of the following three:
 - Machine Learning
 - Neural Networks
 - Image Analysis
- Basic programming skills
- Basic Ubuntu (Preferred)

Please send your application including CV and report card to:

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