

Internship and/or Master Thesis Electrical Engineering

At Baker Hughes, we are transforming the future of energy. With operations in over 120 countries, we are developing and deploying industry-leading technologies and services to take energy forward. Smart solutions, geothermal, and hydrogen technologies are supporting the industry on the path to net-zero and sustainable energy. Our oilfield technologies and services help to operate efficiently and predictably and are enriched by digitalization, artificial intelligence, and automation capabilities.



Task Description:

Baker Hughes is continuously improving its measurement and logging while drilling service portfolio. The required communication between downhole and uphole is usually done by modulating acoustic waves on the drilling mud in the borehole, also known as Mud Pulse Telemetry (MPT). Due to the special properties and requirements of this communication channel, comprehensive studies are necessary to develop advanced receiver algorithms enabling a step-change in system performance. These new solutions have to be implemented, tested and integrated into the existing software framework. Afterwards, the performance of the developed solutions will be verified based on software-in-the-loop and hardware-in-the-loop testing as well as field tests at a real rig side.

Key Responsibilities:

- Literature research on existing algorithms
- Design, modelling and simulation of communication systems
- Derivation and evaluation of borehole channel models
- Conversion of legacy algorithms and solutions to the current software framework

Essential Qualifications/Requirements:

- Student in Electrical Engineering or Computer/Data Science
- Experience in communication systems and skilled with Matlab/Simulink
- Self-motivated and structured to work within an interdisciplinary team
- Good written and verbal English skills, due to working in an international working environment and strong interest in working with other cultures

Preferred Qualifications:

- Good ability to communicate
- Programming skills in C, C++
- Experience in modelling and simulation

Start:

- Immediately

Contact:

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