Bei **ABB** unterstützen wir die Industrie dabei, effizienter und sauberer zu arbeiten - und jeder Einzelne trägt hier dazu bei. Sie haben die Möglichkeit, eine Führungsrolle zu übernehmen, wir unterstützen Sie bei Ihrer Entwicklung und Sie werden stolz auf das sein, was wir gemeinsam erreichen. Kommen Sie zu uns und helfen Sie mit, die Welt zu verändern.

Internship/Master Thesis student (m/f/d) Highly Dynamic Control of Electric Drives

Key responsibilities

The work model for the role is: #LI-Hybrid

You will actively contribute to the development and extension of our test platform for driving novel electromagnetic actuators. You will focus on implementing highly dynamic control strategies using FPGA-based hardware.

You will be mainly accountable for:

- Literature review of dynamic control methods of electromagnetic actuators and motors. Identification of advantages and disadvantages in the scope of our applications.
- Selection and prioritization of control methods to be implemented.
- Simulation-based optimization and benchmarking of selected control methods.
- Implementation of the selected control methods using cRIO hardware and LabView programming environment.
- Review of our existing test platform hardware, if needed proposing and implementing updates.
- Design a test set-up to validate the implemented controls in dynamic drive applications.
- Contributing your own ideas and creativity to enhance existing control concepts and techniques.
- Documentation of the work and presentation to different ABB stakeholders.

Qualifications for the role

- You are currently enrolled in a Master's program in Electrical Engineering, Mechatronics, or a related technical field.
- You have a solid theoretical background in electric drives and motor control. You are familiar with control techniques for AC motors such as field-oriented or direct torque control. Hands-on experience with synchronous reluctance (SynRM) or permanent-magnet synchronous motor (PMSM) is desirable.
- You have practical experience with programming tools for real-time control applications, such as MATLAB/Simulink, C/C++, or Python. Experience with LabView or cRIO controllers is a plus.
- You have a fundamental understanding of power electronics, including inverter operation, PWM techniques, and current sensing.
- You have hands-on experience with laboratory setups, particularly with electrical machines, power electronics, or drive systems.
- You bring strong communication skills and the ability to present technical results clearly in both written and spoken English.

More about us:

We believe in fairness, so interns who join us will benefit from our expertise as they expand their own knowledge. We give you the scope to try things out for yourself and obtain practical experience. Your time is valuable, so you will receive appropriate remuneration for the duration of the internship.

Please note that internships are generally limited to six months, while voluntary internships during a bachelor course are for a maximum of three months.

Please state whether you are applying for a voluntary or mandatory internship or master’s thesis student and be sure to enclose your certificate of enrolment. In the case of mandatory internships, please include the corresponding extract from your university’s internship guidelines.

Interested? Then we look forward to receiving your informative application (cover letter, CV, certificate of enrolment, current transcript of grades and other supporting documents) through our online careers tool.

Interested in joining our team? We are looking forward to receiving your complete application (CV, Cover letter, Transcript of records) through our online tool. In the case of equal suitability, people with severe disabilities and their equals are given preference.

ABB AG

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