Research Engineer Wind Turbine Controls (m/f) –
Job No. 1927644

About us

GE Global Research - Europe employs approximately 200 engineers and scientists from more than 40 different countries. Our scientists and technologists come from a variety of disciplines and backgrounds, including chemistry, physics, mathematics, engineering, sciences and materials research.

Located in the heart of southern Germany, Global Research - Europe sits on the Garching campus of the Technical University of Munich. This creates a unique blend for our scientists to be in a university setting, while performing research in a world-class industrial lab that is dedicated to bringing new technologies to market. The facility also operates closely with technology teams at GE businesses across the globe, ensuring effective transition of breakthrough innovations from the lab into advanced products and services. Within the R&D community, the center maintains close partnerships with numerous universities, research institutions and technology companies in Germany and abroad.

Current research at the facility focuses on automated manufacturing of composite parts, waste heat recovery for industrial and power applications, grid integration of renewable energies, molecular imaging for cancer diagnostics, high power electronics for stationary and mobile applications and advanced compressor technologies.

Role Summary/ Purpose

You will be a member of a highly motivated team of researchers that works closely with other GE Global Research sites and the GE businesses worldwide. You will provide your expertise especially in the area of systems analysis and modeling, control system design, implementation, integration and verification. You will contribute primarily to the area of wind energy systems within GE.

Responsibilities

- Develop advanced control algorithms for load reduction and performance enhancement of wind turbines and wind farms
- Work with GE businesses to identify their controls needs and formulate system requirements
- Keep abreast of developments on control system theory, wind turbine and wind farm modeling and controls. Identify suitable opportunities for new technologies
- Participate in and lead projects from control system conception to implementation and validation
- Work with other engineering disciplines (mechanical, power electronics, etc.) to develop innovative solutions by using systems engineering and control approaches
- Implement and validate models and controllers in simulation and rapid-prototyping environments
- Document work in reports, conference papers, and presentations to all levels of management

Qualifications

- Doctorate in controls / systems theory or a related discipline; preferably with applications to wind energy systems (or M.Sc. degree and at least 3 years of relevant professional experience in the area of wind turbine or wind farm modeling and controls)
- Industry and/or post-doc experience in control systems analysis, design, implementation, integration and verification is an advantage
- Solid knowledge of modern control systems theory (e.g., multivariable linear and nonlinear control, system identification)
- Proficiency with MATLAB / Simulink
- Experience with implementation and validation of control algorithms
- Good knowledge in wind turbine and/or wind farm modeling and control
- Knowledge and experience in wind turbine aeroelastic simulation tool (e.g. in Bladed, HAWC2, FAST, Flex) and post-processing of the results
- Excellent academic track record and proven scientific achievements
- Excellent communication skills
- Can-do attitude
- Global mindset
- Fluency in English

We look forward to receiving your online application.

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