LEC

Large Engines
Competence Center
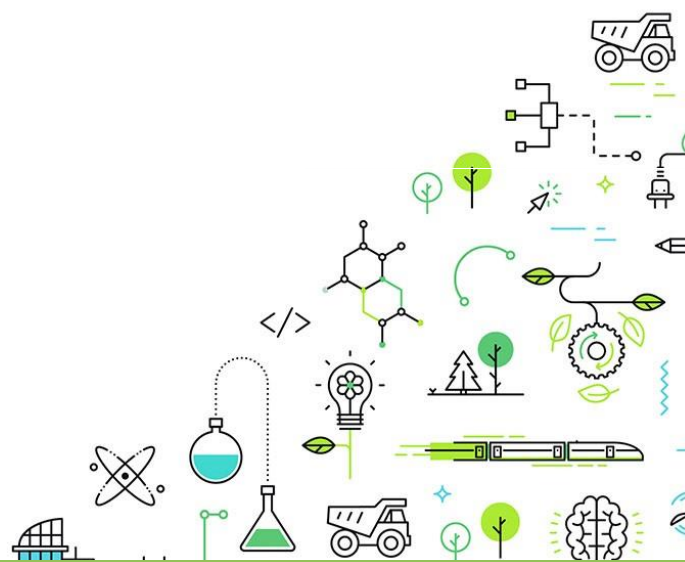
Become part of our team!

We search for a

PhD Student (m/f/d)

Research focus:
Advanced Digital Methods to Increase
Reliability of Critical Power Unit Components

Task description

The operational safety, efficiency and emissions of large internal combustion engines (ICE) in power generation and transportation applications depend greatly on the reliable operation of critical power unit components such as hydrodynamic sliding bearings. To avoid out-of-spec function, catastrophic failure or unforeseen engine downtime, it is therefore vital to continuously assess the condition of the bearing and the associated lubricant. For the research area "Data analytics and controls", we are therefore looking for a motivated and innovative PhD student to generate experimental data and research strategies for condition monitoring of sliding bearings in large ICEs, in particular employing advanced methods from the field of artificial intelligence (AI) and its subfield machine learning (ML).

Responsibility

- Elaborate the fundamentals for bearing condition monitoring (e.g., reasonable parameters and measurement systems for condition detection)
- Develop a comprehensive testing strategy for the experimental investigation of bearings in different environments (bearing test rig and different engine test rigs) by employing approaches such as design of experiments
- Generate a comprehensive database with help of the experimental investigations
- Identify and evaluate data-driven approaches which serve to establish bearing condition monitoring applications
- Interact closely within the LEC's research team and with key persons from industry project partners
- Communicate the project results in regular internal meetings and to project partners
- Disseminate the project results in the form of scientific publications and elaborate a doctoral thesis

The LEC supports equal opportunities and diversity.
We are looking for dedicated and motivated individuals with research talent.

Your profile

- Qualified degree (MSc, Dipl.-Ing) in mechanical engineering, electrical engineering or similar
- Good analytical skills combined with problem-solving orientation
- Interest in AI and in particular in ML techniques
- Experience in data analysis using Python, R or similar
- Interpersonal skills with initiative and perseverance
- Collaborative work in a multidisciplinary team
- Not afraid of technical writing
- Fluent in English, German is a plus

Our offer

- Possibility to elaborate a PhD thesis within an exciting research project
- Availability of outstanding research infrastructure at the Graz University of Technology campus
- Excellent possibilities for further personal and professional development
- Full-time position with a monthly gross salary of € 3.277,-
- Option to work part-time from home
- Earliest starting date: February 1st, 2023

Contact:

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Become part of our
LEC team!

We look forward to
receiving your
application.

www.LEC.at