

PhD Position in the Field of Future Wind Farms Control

As pioneers in the field of wind energy and control, we are looking for an ambitious PhD candidate to join our research group on these topics.

Job description

Wind energy is crucial for realizing climate neutrality, energy independence, and energy security. Optimal operation of wind energy systems is challenging because of their inherent complexity, fast-changing operating conditions, as well as conflicting requirements for the cost of investment and energy generation. Novel optimization-based controllers have the potential to tackle these challenges. In particular, the controllers leverage the properties of feedback to take into account recent data instead of relying on mathematical models of the system, making them a good candidate for future wind farm control. At the same time, long-term performance of these controllers remains an open question.

Within the HKN project we currently have an open position with the focus on operation and control of future wind farms using optimization-based controllers. The main objective of the PhD is to develop adaptive control algorithms for long-term operation of wind farms, taking into account varying operating conditions.

Job requirements

The successful candidate has the following qualifications:

- An MSc. degree in systems and control, mechatronics, applied mathematics, mechanical engineering, or a related field.
- Fundamental knowledge in the field of optimization and control.
- The capacity to communicate effectively with peers, students and stakeholders in the application field
- Good programming skills are a plus: MATLAB, Python, Julia, Git
- Fluency in English
- An open personality and good communication skills in written and spoken English.

Doing a PhD at TU Delft requires English proficiency at a certain level to ensure that the candidate is able to communicate and interact well, participate in English-taught Doctoral Education courses, and write scientific articles and a final thesis. For more details please check the Graduate Schools Admission Requirements

TU Delft (Delft University of Technology)

Delft University of Technology is built on strong foundations. As creators of the world-famous Dutch waterworks and pioneers in biotech, TU Delft is a top international university combining science, engineering and design. It delivers world class results in education, research and innovation to address challenges in the areas of energy, climate, mobility, health and digital society. For generations, our engineers have proven to be entrepreneurial problem-solvers, both in business and in a social context.

At TU Delft we embrace diversity as one of our core [values](#) and we actively [engage](#) to be a university where you feel at home and can flourish. We value different perspectives and qualities. We believe this makes our work more innovative, the TU Delft community more vibrant and the world more just. Together, we imagine, invent and create solutions using technology to have a positive impact on a global scale. That is why we invite you to apply. Your application will receive fair consideration.

Challenge. Change. Impact!

Faculty Mechanical Engineering

From chip to ship. From machine to human being. From idea to solution. Driven by a deep-rooted desire to understand our environment and discover its underlying mechanisms, research and education at the ME faculty focusses on fundamental understanding, design, production including application and product improvement, materials, processes and (mechanical) systems.

ME is a dynamic and innovative faculty with high-tech lab facilities and international reach. It's a large faculty but also versatile, so we can often make unique connections by combining different disciplines. This is reflected in ME's outstanding, state-of-the-art education, which trains students to become responsible and socially engaged engineers and scientists. We translate our knowledge and insights into solutions to societal issues, contributing to a sustainable society and to the development of prosperity and well-being. That is what unites us in pioneering research, inspiring education and (inter)national cooperation.

Click [here](#) to go to the website of the Faculty of Mechanical Engineering. Do you want to experience working at our faculty? These [videos](#) will introduce you to some of our researchers and their work.

Conditions of employment

Doctoral candidates will be offered a 4-year period of employment in principle, but in the form of 2 employment contracts. An initial 1,5 year contract with an official go/no go progress assessment within 15 months. Followed by an additional contract for the remaining 2,5 years assuming everything goes well and performance requirements are met.

Salary and benefits are in accordance with the Collective Labour Agreement for Dutch Universities, increasing from € 2872 per month in the first year to € 3670 in the fourth year. As a PhD candidate you will be enrolled in the TU Delft Graduate School. The TU Delft Graduate School provides an inspiring research environment with an excellent team of supervisors, academic staff and a mentor. The Doctoral Education Programme is aimed at developing your transferable, discipline-related and research skills.

The TU Delft offers a customisable compensation package, discounts on health insurance, and a monthly work costs contribution. Flexible work schedules can be arranged.

For international applicants, TU Delft has the [Coming to Delft Service](#). This service provides information for new international employees to help you prepare the relocation and to settle in the Netherlands. The Coming to Delft Service offers a [Dual Career Programme](#) for partners and they organise events to expand your (social) network.

Additional information

For more information about this vacancy, please contact Dr Marta Zagorowska, m.a.zagorowska@tudelft.nl, or prof. Jan-Willem van Wingerden, j.w.vanwingerden@tudelft.nl.

Application procedure

Are you interested in this vacancy? Please apply no later than 5 Jan 2025 via this [application link](#) and upload the following documents:

- CV.
- Motivational letter.
- Names and contact information of two referees.
- (Draft) Master thesis.

You can address your application to .

For information about the application procedure, please contact Mr Giedo Kocken, HR advisor, recruitment-me@tudelft.nl.

Doing a PhD at TU Delft requires English proficiency at a certain level to ensure that the candidate is able to communicate and interact well, participate in English-taught Doctoral Education courses, and write scientific articles and a final thesis. For more details please check the [Graduate Schools Admission Requirements](#).

Please note:

- You can apply online. We will not process applications sent by email and/or post.
- A pre-employment screening can be part of the selection procedure.
- A knowledge security check will be part of the selection procedure (for details page 45: [national knowledge security guidelines](#)).
- Please do not contact us for unsolicited services.