Delft Center for Systems and Control

TU Delft
Delft University of Technology

PhD positions in the Field of Wind Farm Control

Apply Now

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

Job description

Wind energy is crucial for realizing climate neutrality, energy independence, and energy security. With the increased penetration of renewables in the electricity grid, there is a strong need for control technology to determine the number of electrons to produce and their destination (e.g., grid, storage, hydrogen) for maximum value to the energy system. Whereas the technology available on the market exclusively maximizes the energy yield, the future lies with optimization for cost of valued energy, which considers energy security, storage, fluctuating electricity prices, turbine component wear, and turbine lifetime. With several partners in the EU we will develop open-source technology for resilient, and data-enabled offshore wind farm control and co-design. For multiple projects we are currently looking for several PhD's:

1) Measuring the wake of novel wake mixing strategies using lidars

2) Integrated wind farm control, combining different flow control strategies

3) Co-design, simultaneous design of the wind farm lay-out and control strategy

4) Data-driven wind farm control (using AI to optimize the performance of wind farms).

Requirements

The successful candidate has the following qualifications:

- An MSc. degree in systems and control, wind energy, aeroelastics, mechatronics, applied mathematics, mechanical engineering, or a related field.
- Fundamental knowledge in the field of control.
- The capacity to communicate effectively with peers, students and stakeholders in the application field
- Good programming skills are a plus: MATLAB, Python, 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.

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 € 2541 per month in the first year to € 3247 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 sport memberships, 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.

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, Maritime and Materials 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 3mE faculty focusses on fundamental understanding, design, production including application and product improvement, materials, processes and (mechanical) systems.

3mE 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 3mE'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, Maritime and Materials Engineering. Do you want to experience working at our faculty? These videos will introduce you to some of our researchers and their work.

Additional information

For more information about this vacancy, please contact Prof. Jan-Willem van Wingerden, j.w.vanwingerden@tudelft.nl.

Application procedure

Are you interested in this vacancy? Please apply before 1 July 2023 via the application button and upload:

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

For information about the application procedure, please contact Ms. Linda Verhaar, HR advisor, recruitment-3me@tudelft.nl.

Please note:
A pre-employment screening can be part of the selection procedure.
You can apply online. We will not process applications sent by email and/or post.
Acquisition in response to this vacancy is not appreciated.

Apply Now