PhD position in the ShipDrive Program on:

"Distributed Control for Hybrid Ship Systems"

at Delft University of Technology (Marine & Transport Technology), The Netherlands

Job description

We seek a talented and ambitious PhD candidate for a challenging multidisciplinary research project on control of a new generation of ships. The PhD position is defined within the framework of the recently approved NWO/STW Maritime program "ShipDrive: A Novel Methodology for Dynamic Integrated Modelling, Control and Optimization of Hybrid Ship Systems".

The overall objectives of this program are:

• to propose a novel design and optimization methodology for integrating hybrid propulsion and energy systems on board of ships;

• to propose control strategies based on functional criteria for hybrid sip systems on several control layers.

The current vacancy focuses on the control aspect. The control criteria will include running cost of the ship asset, fuel consumption and influence on environment in terms of emissions and radiated (underwater) noise. In your research you will work together with 2 PhD candidates working on other challenges of the program.

In the project, the potential of the proposed approaches will be assessed in the specific and demanding maritime environment. This makes the research involved both innovative and highly applicable to actual issues in the maritime industry, the government and society.

The researcher working on this project will have the opportunity to work in a multidisciplinary team of academic experts, as well as with leading industrial (ship building) partners. This will allow both the realization of new, innovative, fundamental control contributions as well as the opportunity to demonstrate their practical relevance via state-of-the-art demonstrators.

Within the framework of the project there will be 3 PhD projects. One PhD project will focus more on the vessel design aspect, taking particular maritime characteristics into account; the second PhD project (this vacancy) will focus on the operational control, aiming for maximizing the performance of a given vessel design. The third PhD project focuses on taking specific industrial developments into account in an integrated control and design framework.

Requirements

We are seeking an outstanding and enthusiastic researcher with a strong interest in the development of novel control algorithms and their application in ship systems and who has expertise and interest in at least 2 of the following areas:

(distributed) control, multi-agent systems, (mathematical) optimization, model-based predictive control, dynamical systems, simulation, vessels, ship systems, power/energy systems, smart grids

You have obtained an MSc or equivalent degree or expect to obtain a MSc very soon related to these areas. Well spoken and written English is mandatory.

Conditions of employment

TU Delft offers an attractive benefits package, including a flexible work week, free high-speed Internet access from home and the option of assembling a customized compensation and benefits package (the 'IKA'). Salary and benefits are in accordance with the Collective Labour Agreement for Dutch Universities. You will get a contract for four years with a go/no evaluation after 1 year.

As a PhD candidate you will be enrolled in the TU Delft Graduate School. TU Delft Graduate School provides an inspiring research environment; an excellent team of supervisors, academic staff and a mentor; and a Doctoral Education Programme aimed at developing your transferable, discipline-related and research skills. Please visit http://www.phd.tudelft.nl/ for more information.

For more information about this position, please contact Dr. Rudy Negenborn, phone: +31 (0)15-2786718, e-mail: r.r.negenborn@tudelft.nl.

To apply, please e-mail to Dr. Rudy Negenborn:

- an up-to-date curriculum vitae,
- a letter of application,
- a transcript of grades obtained during MSc studies,
- the names and contact information (telephone number and e-mail address) of two references

The letter of application should summarize: 1) why the project is of interest to the applicant and 2) a brief description of the applicant's prior experience in the areas of interest (e.g., a description of the research performed in the context of the applicant's MSc thesis).

Applications can be submitted now until a suitable candidate has been selected.

The appointment can start on a short term.

Relevant URLs

- TUDelft – http://www.tudelft.nl/
- Faculty Mechanical, Maritime & Materials Engineering – http://www.3me.tudelft.nl/
- Department of Maritime & Transport Technology – http://www.mtt.tudelft.nl/
- Working at TUDelft -- http://www.tudelft.nl/en/about-tu-delft/working-at-tu-delft/
- TUDelft Graduate School – http://www.3me.tudelft.nl/onderzoek/the-3me-graduate-school/