PhD - Virtual reality assessment of pedestrian and cyclist interaction with automated vehicles

Specifications - (explanation)

Location	Delft
Function types	PhD positions, Research, Development, Innovation
Scientific fields	Engineering
Hours	38.0 hours per week
Salary	€ 2325 - € 2972
Education	University Graduate
Job number	3mE19-53
Translations	en
About employer	Delft University of Technology (TU Delft)
Short link	www.academictransfer.com/55348

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Job description

TU Delft, the Netherlands, invites applications for a fully funded PhD position in the European project "SHAPE-IT: Supporting the interaction of Humans and Automated vehicles".
SHAPE-IT is recruiting 15 PhD candidates in Sweden, the Netherlands, UK, and Germany, collaborating through internships and joint training. SHAPE-IT is funded by a European Commission Horizon 2020 program for research and innovation: Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN).

Vehicle automation has been identified as a game-changer in transport, promising substantial reductions in road-traffic fatalities while improving mobility. However, the processes of integrating automation in transport have been primarily technology-focussed, with insufficient consideration to how humans will interact with automated vehicles (AVs).

SHAPE-IT aims to facilitate the safe, acceptable (and, ideally, desirable) integration of user-centred and transparent AVs into tomorrow's mixed urban traffic environments, studying and modelling human behaviour to design advanced interfaces and control strategies.

This PhD candidate (ESR09) will develop virtual reality (VR) and augmented reality (AR) methods to investigate the interaction between automated vehicles (AVs) and vulnerable road users (VRUs). Validity will be evaluated by comparing behaviour and perception in VR/AR to interactions with experimental vehicles.

He or she will develop and test, in VR, external HMIs (eHMI) that inform the VRU about the AV's intentions. Accordingly, the candidate will advance knowledge about AV-VRU interaction on topics such as safety, expectancy, acceptance, and trust.

Requirements

We are looking for candidates with a MSc in Mechanical Engineering or related fields, and having a strong interest in human factors and virtual reality.

Candidates cannot hold a doctorate degree, and should be within 4 years of obtaining their MSc qualification. Candidates are expected to undertake transnational mobility (i.e. move from one country to another). Hence, candidates can only apply for positions in countries where they have stayed less than 12 months during the last 3 years.

Conditions of employment

TU Delft offers a customisable compensation package, a discount for health insurance and sport memberships, and a monthly work costs contribution. Flexible work schedules can be arranged. An International Children's Centre offers childcare and an international primary school. Dual Career Services offers support to accompanying partners. Salary and benefits are in accordance with the Collective Labour Agreement for Dutch Universities.

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.tudelft.nl/phd for more information.

Contract type: Temporary, 4 years

Employer

Delft University of Technology

Delft University of Technology (TU Delft) is a multifaceted institution offering education and carrying out research in the technical sciences at an internationally recognised level. Education, research and design are strongly oriented towards applicability. TU Delft develops technologies for future generations, focusing on sustainability, safety and economic vitality. At TU Delft you will work in an environment where technical sciences and society converge. TU Delft comprises eight faculties, unique laboratories, research institutes and schools.

Department

Faculty Mechanical, Maritime and Materials Engineering

The 3mE Faculty trains committed engineering students, PhD candidates and post-doctoral researchers in groundbreaking scientific research in the fields of mechanical, maritime and materials engineering. 3mE is the epitome of a dynamic, innovative faculty, with a European scope that contributes demonstrable economic and social benefits.

The Cognitive Robotics department within the 3mE Faculty aims to develop intelligent robots and vehicles that will advance mobility, productivity and quality of life. Its mission is to bring robotic solutions to human-inhabited environments, focusing on research in the areas of machine perception, motion planning and control, machine learning, automatic control and interaction. The department combines fundamental research with work on physical demonstrators in areas such as self-driving vehicles, collaborative industrial robots, mobile manipulators and haptic interfaces. Collaborations exist with cross-faculty institutes TU Delft Robotics Institute and TU Delft Transport Institute), the national robotic ecosystem (RoboValley, Holland Robotics) and international industry and academia. For more information, see Cognitive Robotics (CoR).

Additional information

For more information about this position, please contact dr R. Happee, Associate Professor, e-mail: r.happee@tudelft.nl, tel.: +31 1527883213.
To apply, please submit a letter of motivation and your resume by email to application-3mE@tudelft.nl. Interviews are ongoing until the position is filled (rapid application is recommended). When applying for this position, please refer to vacancy number 3mE19-53 in the subject of the email.