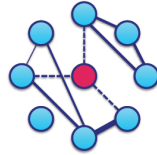


# PhD Student in the Distributed Systems Group

*"Removing the VM bottleneck in big-data processing"*

**Delft University of Technology, the Netherlands**



Delft University of Technology invites applicants for a PhD position in the Distributed Systems Group in the Department Software Technology of the Faculty of Electrical Engineering, Mathematics and Computer Science.

## **The Distributed Systems Group**

The Distributed Systems group (<http://www.ds.ewi.tudelft.nl>), under the leadership of Prof. Dick Epema, performs world-class research in the design, implementation, deployment, and analysis of large-scale, Internet-based computer systems. It currently has three research lines: scheduling and resource management in distributed computing systems (e.g., in clusters and clouds), big-data processing (e.g., graph processing), and cooperative systems (blockchain technology, trust and reputation systems). Its research is fundamental, aimed at the development and evaluation of new generic concepts in systems software, and application-driven, motivated by important application areas. Much of it is experimental, validating the proposed new concepts by means of implementation and deployment in prototypes that are used in the real world.

## **The Department Software Technology**

The Department of Software Technology (ST) is one of the leading Dutch departments in research and academic education in computer science, employing over 150 people. The department ST is responsible for a large part of the curriculum of the bachelor's and master's programmes in Computer Science as well as the master's programme in Embedded Systems. The inspiration for its research topics is largely derived from technical ICT problems in industry and society related to large-scale distributed processing, embedded systems, programming productivity, and web-based information analysis.

## **The Faculty Electrical Engineering, Mathematics and Computer Science**

The Faculty of Electrical Engineering, Mathematics and Computer Science (EEMCS) is known worldwide for its high academic quality and the social relevance of its research programmes. Offering an international environment, the faculty has more than 1100 employees (including about 400 PhD students) and more than 2100 bachelor's and master's students. Together they work on a broad range of technical innovations in the fields of electrical sustainable energy, microelectronics, intelligent systems, software technology, and applied mathematics.

## **Job description**

Current big data processing platforms like Hadoop and Spark are abstracting away from the architecture and low-level properties of the computers by using the Java virtual machine as an execution environment. This can become a performance liability in large-scale applications and prevents many system- and network-related optimizations. The aim of this PhD project is to build a middleware system that is able to act as a replacement for such platforms by producing highly optimized code even in heterogeneous distributed environments and offering more predictable performance by retaining a higher degree of control over system resources.

## **Requirements**

We are looking for candidates who satisfy the following requirements:

- an MSc degree with excellent results in Computer Science, preferably in distributed systems, operating systems, or related areas

- experience in writing system-level code and conducting scientific evaluations through experimentation
- good speaking and writing skills in English

### **Conditions of employment**

The 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. The gross salary for this position ranges from €2222 to €2840 per month.

As a PhD candidate you will be enrolled in the TU Delft Graduate School. The 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://graduateschool.tudelft.nl/> for more information.

### **Information and application**

For more information about this position, please contact Prof. D.H.J. Epema, e-mail: [D.H.J.Epema@tudelft.nl](mailto:D.H.J.Epema@tudelft.nl) or Dr. J.S. Rellermeyer, e-mail: [J.S.Rellermeyer@tudelft.nl](mailto:J.S.Rellermeyer@tudelft.nl). To apply, please send by e-mail an application letter, a curriculum vitae, transcripts of BSc and MSc degrees, copies of BSc and MSc diplomas, proof of language skills if applicable, and the names of two references by October 30, 2017 to P.T.M. van den Bergh, [Hr-eemcs@tudelft.nl](mailto:Hr-eemcs@tudelft.nl). When applying for this position, please refer to vacancy number EW12017-37.