



UiO : Universitetet i Oslo

The University of Oslo is Norway's oldest and highest rated institution of research and education with 28 000 students and 7000 employees. Its broad range of academic disciplines and internationally esteemed research communities make UiO an important contributor to society.

The Department of Informatics (IFI) is one of nine departments belonging to the Faculty of Mathematics and Natural Sciences at the University of Oslo. IFI is Norway's largest university department for general education and research in Computer Science and related topics. The Department has near 950 students on bachelor level, near 450 master students, and over 180 PhD students. The overall staff of the Department is close to 250 employees, about 200 of these are full time positions. The full time scientific staff is 60, mostly Full/Associate Professors.



PhD Research Fellowship in Services Computing for Future Internet of Things (IoT)

A PhD position is available at the group of Networks and Distributed systems (ND) in the Informatics Department, University of Oslo. The fellowship is part of the DILUTE project, funded by the Research Council of Norway. The project title is Fluid Service Abstraction for Large-Scale Cloud IoT Systems (DILUTE) and it will run in collaboration with:

- Distributed Systems Group (DSG) at Technical University of Vienna, Austria
- Networked Embedded Systems (NES) Group, Swedish Institute of Computer Science (SICS), Sweden
- PrismTech, France

Further information about the project is available at: www.dilute.no

The fellowship is for a period of 3 years. There might be a possibility to extend to 4 years depending on the department's need for teaching and lab assistants.

Starting date preferably no later than 01.09.2017.

Research and study environment:

The project will be conducted at the Networks and Distributed Systems (ND) research group at IFI. The ND research group has 10 Professors and near 20 researchers and PhD students. ND is renowned for its leading research in networking, distributed systems, IoT/CPS systems design, and security and robustness. The group has long experience in coordinating and participating several EU projects, namely, EU FP6 QuA, FP6 MADAM, FP7 MUSIC, FP7 RITE, H2020 NEAT, H2020 HOLACloud, and H2020 MELODIC. ND collaborates closely with well-known universities worldwide, such as UIUC, Princeton Uni., Cornell Uni., Uni. of Toronto, Uni. of California Irvine, TU Munich, and Vrije Uni. Amsterdam.

Project description:

By 2020 there will be nearly 50 billion Internet addressable devices, Internet of Things (IoT), which translates into a \$14.4 trillion business opportunity, according to Cisco Systems. IoT is a global system of IP-connected sensors, actuators, networks, machines and devices. IoT and Cloud integration will enable development of large-scale IoT applications, such as smart cities, energy, health, etc. Moreover, due to requirements such as mobility support, location-awareness and low latency, the cloud has been recently extended to the edge of the network—Fog Computing. Developing large-scale IoT applications using cloud and fog computing resources is challenging because it requires a service abstraction model that matches highly dynamic and heterogeneous resources at different levels of the network hierarchy from IoT devices to fog devices and the cloud. DILUTE is aimed to address this challenge.

The main goal of DILUTE is to develop knowledge, software service design concepts and mechanisms for scalable and dynamic integration of IoT devices and their services into future IoT systems over fog and cloud platforms. It will devise solutions for:

- modeling, developing, and integrating IoT services in dynamic Fog-Cloud computing systems
- managing and adapting these services with respect to dynamicity of IoT devices and the dynamic availability of fog resources.

Requirements/qualifications:

The Faculty of Mathematics and Natural Sciences has a strategic ambition of being a leading research faculty. Candidates for these fellowships will be selected in accordance with this, and expected to be in the upper segment of their class with respect to academic credentials. Suitable background and requirements include:

- The candidate must have a Master's degree in Computer Science, or in a related study, with excellent results and grades. Candidates without a Master's degree have until 30 June 2017 to complete the final exam.
- The candidate should have good analytical and programming skills.
- The ideal candidate for the position will have interest and in-depth knowledge in distributed computing, embedded systems programming, service-oriented design and networking.
- The candidate should preferably have written a master thesis in programming or distributed computing aspects of WSNs/IoT.
- It is also desirable to have relevant publications in recognized conferences/journals.

Other general requirements include:

- The evaluation considers many aspects of excellence, such as being ambitious, intellectually curious, hard-working, and dedicated.
- Knowledge of Norwegian is not a prerequisite for application. English is our working language for research. Therefore, good communication skills in both oral and written English is required
- We expect the candidate to be internationally oriented and willing to do an internship to our partner institutions.

The PhD fellowships require admission to the PhD programme at the Faculty of Mathematics and Natural Sciences. The application to the PhD programme must be submitted to the department no later than two months after taking up the position. For more information see:

[Doctoral degree and PhD](#)

[A good command of English is required.](#)

[Doctoral degree: PhD in Mathematics and Natural Sciences](#)

Salary:

Position code 1017, Salary: NOK 432 700 - 489 300 per year, depending on qualifications and seniority.

The application must include:

- Application letter
- CV (summarizing education, positions and academic work - scientific publications)
- Copies of educational certificates, transcript of records and letters of recommendation
- List of publications and academic work that the applicant wishes to be considered by the evaluation committee
- Names and contact details of 2-3 references (name, relation to candidate, e-mail and telephone number)

Foreign applicants are advised to attach an explanation of their University's grading system. Please remember that all documents should be in English or a Scandinavian language.

In accordance with the University of Oslo's equal opportunities policy, we invite applications from all interested individuals regardless of gender or ethnicity.

UiO has an [agreement](#) for all employees, aiming to secure rights to research results.

Contact information:

Professor Frank Eliassen, +47 22840148, frank@ifi.uio.no

Dr. Amir Taherkordi, +47 22840584, amirhost@ifi.uio.no

For questions about the recruitment system, please contact HR-Officer Helene Jansen, +47 22857196, h.b.jansen@mn.uio.no

Jobbnorge ID: 136176, Deadline: Closed