

PHD AND POSTDOC POSITION AVAILABLE: NETWORK ALGORITHMS

At the Faculty of Engineering and Science, Department of Computer Science, Aalborg University, a PhD and a Postdoc position are available. The positions are open for appointment from February 1, 2017 or soon thereafter.

The postdoc stipend is for one year with an optional extension of one more year. The PhD position is normally for 3 years. Application deadline is December 31, 2016.

The research will focus on fundamental problems underlying modern distributed systems. Application domains motivating our research include software-defined networks, network virtualization, big data analytics, and/or self-adjusting distributed systems.

Concretely, we are looking for applicants with a strong background and interest in one (or both) of the following:

- (1) Theory and algorithms for networks:** design and analysis of online algorithms, approximation algorithms, streaming algorithms, distributed algorithms, for static, dynamic, and self-adjusting networks.
- (2) Design of predictable distributed and networked systems:** Protocols and algorithms for networked and distributed systems, either with focus on performance or security. To give an example, we are interested in building networked systems providing a predictable big data analytics performance even if run in environments featuring unpredictable aspects (e.g., due to resource interference).

For some recent example problems for Theory (1), see e.g.,

- o Algorithms for consistent flow migration:
 - <https://arxiv.org/pdf/1611.09296.pdf> or <http://dl.acm.org/citation.cfm?id=2901476>
- o Distributed algorithms for big data processing:
 - <https://arxiv.org/abs/1602.02991> or <http://dl.acm.org/citation.cfm?id=1400751.1400756>
- o Self-adapting systems and online graph clustering:
 - <https://arxiv.org/abs/1511.02074> or <http://dl.acm.org/citation.cfm?id=2992199>

For some recent examples for Systems (2), see e.g.,

- o Predictable big data analytics performance:
 - <http://ieeexplore.ieee.org/document/7524466/>
- o Security challenges in SDN:
 - <https://arxiv.org/abs/1611.05362> or <https://arxiv.org/abs/1610.08717>

Within these areas, the position comes with many freedoms in terms of the specific research direction, methodology, and approach: the specific focus of the project will depend on the skills and interests of the applicant. Accordingly, in addition to the detailed CV and recommendation letters (if any), the applicant should provide a short cover letter which describes the applicant's background, interests, and initial thoughts and ideas related to the project.

Regarding the host institution: The Computer Science Department at Aalborg University takes a leading international position within data management and verification. It is a very young university (1972) but with a strong international profile in Mathematics Computer Science & Engineering, also hosting the two most highly cited Computer Scientists of the country. According to the CWTS Leiden Ranking 2014 measuring the scientific performance of 750 major universities worldwide, Aalborg University is ranked no. 117 worldwide and is the highest ranked Danish university within Mathematics Computer Science & Engineering.

Aalborg is an attractive student city located at the Fjord and close to the Sea, and is well-connected (by car, train, but also via Aalborg Airport). Denmark in general and Aalborg in particular are known for their excellent quality of life. Denmark took the top spot on the United Nation's World Happiness Report, 2013 & 2014 & 2016 and came in third in the 2015 report: <http://www.visitdenmark.co.uk/en-gb/denmark/art/happiest-people-world> .

For any questions, please do not hesitate to contact Assoc-Prof Dr. Stefan Schmid: schmiste@cs.aau.dk / <https://net.t-labs.tu-berlin.de/~stefan/>

Qualification requirements and application procedure for PhD student:

PhD stipends are allocated to individuals who hold a Master's degree. PhD stipends are normally for a period of 3 years. It is a prerequisite for allocation of the stipend that the candidate will be enrolled as a PhD student at the Doctoral School of the Faculty of Engineering and Science, in accordance with the regulations of Ministerial Order No. 1039 of August 27, 2013 on the PhD Programme at the Universities and Certain Higher Artistic Educational Institutions. According to the Ministerial Order, the progress of the PhD student shall be assessed every six months. It is a prerequisite for continuation of salary payment that the previous progress is approved at the time of

the evaluation.

The qualifications of the applicant will be assessed by an assessment committee. On the basis of the recommendation of the assessment committee, the Dean of the Faculty of Engineering and Science will make a decision for allocating the stipend.

For further information about stipends and salary as well as practical issues concerning the application procedure, contact Ms. Britt Søe Bisgaard, The Faculty of Engineering and Science, email: bbi@adm.aau.dk, phone: [+45 9940 7691](tel:+4599407691).

The Faculty have a research school, The Doctoral School of Engineering and Science: www.phd.teknat.aau.dk and a Network for all PhD students: www.pau.aau.dk

The application is only to be submitted online by using the "Apply online" button at: <http://www.stillinger.aau.dk/vis-stilling/?vacancy=875066>

Qualification requirements and application procedure for PostDoc:

Appointment as Postdoc presupposes scientific qualifications at PhD-level or similar scientific qualifications. The research potential of each applicant will be emphasized in the overall assessment. In general, appointment as a Postdoc cannot exceed a period of four years in total at Aalborg University.

The application must contain the following:

- A motivated text wherein the reasons for applying, qualifications in relation to the position, and intentions and visions for the position are stated.
- A current curriculum vitae.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- Scientific qualifications. A complete list of publications must be attached with an indication of the works the applicant wishes to be considered. You may attach up to 5 publications.
- Dissemination qualifications, including participation on committees or boards, participation in organisations and the like.
- Additional qualifications in relation to the position.
- References/recommendations.
- Personal data.

The applications should be submitted to Stefan Schmid (schmiste@cs.aau.dk) by email.