Postdoctoral and Ph.D. positions on Detecting and Removing Security Vulnerabilities in Software, at Uppsala University

Submitted by Anonymous on Tue, 04/03/2018 - 2:48pm

Uppsala University hereby declares the following positions open for application

1 Post-Doctoral Position
3 PhD positions

on Techniques for Detecting and Removing Security Vulnerabilities in Software

Subject area and Duties:

The topic for the positions is to develop techniques for detecting and removing security vulnerabilities in software, and applying these techniques in software for IoT devices and for the Web. Techniques that the positions will focus on include program analysis, verification, symbolic execution, testing using fuzzing, taint analysis, model learning; supported by constraint solving and SMT. Among the goals is to significantly extend the power and scalability of such techniques to real-world code bases; in particular, to analyse the widely-used Contiki OS for IoT, and to efficiently and precisely analyse JavaScript code implementing client-side or server-side functionality.

Environment:

The positions are funded by recent five-year grants from SSF (the Swedish Foundation for Strategic Research) that bring together several research groups at Uppsala University (Bengt Jonsson, Parosh Abdulla, Mohammed Faouzi Atig, Philipp Ruenmer, Kostis Sagonas, Wang Yi) that are world-renowned in the fields of automated verification, programming language implementation, and testing. The work is performed in collaboration with partners at RISE SICS (Simon Duquennoy, Luca Mottola, Shahid Raza, Thiemo Voigt) including developers of the Contiki OS, and the SICS Security lab, as well as the language-based security group at Chalmers (Andrei Sabelfeld).

Uppsala University is a comprehensive research-intensive university with a strong international standing. Our mission is to pursue top-quality research and education and to interact constructively with society. Our most important assets
are all the individuals whose curiosity and dedication make Uppsala University one of Sweden’s most exciting workplaces. Uppsala University has 42,000 students, 7,000 employees and a turnover of SEK 6.7 billion. The Department of Information Technology has a leading position in research and education. The Department currently has about 280 employees, including 120 teachers and 110 PhD students. More than 4000 students study one or more courses at the department each year. More info: [http://www.it.uu.se/](http://www.it.uu.se/)

**Requirements for Post-Doctoral position:**

- The Post-Doctoral position requires a Ph.D. degree in Computer Science, Computer Engineering, or equivalent. The degree should typically have been obtained not more than three years ago. A successful candidate should have a strong research experience in some of the fields: program analysis, compiler techniques, model checking, formal verification, testing, security, software engineering, and similar, as well as be proficient in building software systems and tools. Strong skills in spoken and written English are required.
- A Post-Doctoral position is time-limited for a maximum of two years, and may include some teaching (at most 20%).

**Requirements for PhD. Position:**

- A Ph.D. candidate should have a Master of Science in Computer Science, Computer Engineering, or equivalent, in a field which is relevant for the work. It is helpful to have a good background in some of the fields program analysis, compiler techniques, model checking, formal verification, testing, security, software engineering, and similar, as well as to be proficient in implementing non-trivial algorithms. Strong skills in spoken and written English are required.
- A PhD position is for a maximum of five years and includes departmental duties at a level of at most 20% (typically teaching, in English or Swedish) as well as taking graduate courses.

**Application for Post-Doctoral position:**

Applications should include a description of research interests and past experience, including a motivation for applying for this position, a CV, copies of exams, degrees and grades, a copy of Ph.D. thesis (or a draft thereof), relevant publications, and other relevant documents. Applications should be accompanied by at least two letter(s) of recommendation and contact information to reference persons, as well as earliest feasible starting date of employment.

**Application for PhD position:**

Applications should include a statement of purpose, motivating preferred research directions, including a description of past experience, a CV, copies of exams, degrees and grades, a copy of Master thesis (or a draft thereof), relevant
publications, and other relevant documents. Applicants and are encouraged to provide letter(s) of recommendation and contact information to reference persons, as well as earliest feasible starting date of employment.

The department is striving to achieve a more equal gender balance and female candidates are particularly invited to apply.

You are welcome to submit your application no later than 2018-04-23, through the University’s web interface, which is available from the full announcement: for Post-Doctoral position (UFV-PA 2018/1007) at http://uu.se/en/about-uu/join-us/details/?positionId=200110
For PhD positions (UFV-PA 2018/955) at http://uu.se/en/about-uu/join-us/details/?positionId=198569

For further information, consult the full announcement at http://www.it.uu.se/ or contact Bengt Jonsson (bengt.jonsson@it.uu.se), Philipp Ruemmer (philipp.ruemmer@it.uu.se), or Kostis Sagonas (kostis@it.uu.se).

About working in Sweden: Sweden is a fantastic place for living and working. Swedes are friendly and speak excellent English. The quality of life is high, with a strong emphasis on outdoor activities. The Swedish working climate emphasizes an open atmosphere, with active discussions involving both junior and senior employees. Healthcare incurs only small fees. Parental benefits allow 13 months of parental leave, extending the length of employment correspondingly. Childcare is of high quality and very affordable.