Postdoc and Ph.D. Positions in Security & Concurrency with Formal Methods

The Chair MAIS is offering multiple positions. We are looking for researchers who are interested in addressing foundational problems that will be of practical relevance or in addressing practical problems based on formal methods. The research focus shall be on software security, concurrency, or their combination.

The research focus shall be on one of the following topics:

- *modular reasoning about information-flow security*
- *sound program analysis under relaxed consistency guarantees*
- *sound re-engineering of code for more parallelism*
- *definition of security requirements and security policy languages*

Your research shall be based on solid theoretical foundations and could result, e.g., in foundational insights, in program analysis and transformation techniques, in tools that are reliable and efficient, in instructive case studies, or in verified critical software systems. More information on the four individual topics is available at http://www.mais.informatik.tu-darmstadt.de/Positions.html .

You should have a solid background in at least one of the following areas:

- *formal methods in Computer Science or mathematical logic*
- *semantics of concurrent programs or weak memory models*
- *information-flow security or usage control*
- *program analysis or transformation techniques*
- *use of verification tools like Isabelle/HOL or Coq*

You should be highly motivated to tackle challenging research projects and be open minded. You need very good language skills in English, both in talking and writing. Prior knowledge of German is not expected, but you should be willing to obtain basic skills within a year. For a Postdoc position, you need to hold a Ph.D. (or to have completed all requirements upon start of appointment), you should aim for scientific leadership, and have organizational skills. For a Ph.D. position, you need to hold a Master's degree in Computer Science or Mathematics (or to have completed all requirements upon start of appointment).

We are offering a productive and collaborative research environment in which you can discuss ideas with team members who are working on interesting research topics. Our international connections and our involvement in leading-edge research projects (like RS^3, Software-Factory 4.0, CRISP, and CROSSING) provide further opportunities for collaborations.

Applications should arrive before January 8, 2018. Later arriving applications will be considered if the positions are still available. These are positions with regular salary and social benefits based on TV-TUD. TU Darmstadt is an equal-opportunities employer and encourages applications from women. In case of equal qualifications, applicants with a degree of disability of at least 50% will be given preference.

TECHNISCHE UNIVERSITÄT DARMSTADT

MAIS Modeling and Analysis of Information Systems

TU Darmstadt is one of Germany's top technical universities with an outstanding reputation in research and education in Computer Science.

The Chair MAIS is led by Prof. Dr. Heiko Mantel. The overall research objective of MAIS is to increase the trustworthiness and reliability of software-based systems.

The spectrum of research questions ranges from theoretical foundations over methods and tools to applications in the real world.

Current topics include

- concurrency theory and software parallelization,
- information-flow security,
- language-based security,
- security engineering,
- side-channel analysis and mitigation in cryptography,
- software re-engineering,
- sound abstractions and modular reasoning,
- static and dynamic program analysis, and
- usage control in distributed systems.

For more information see http://www.mais.informatik.tu-darmstadt.de .

How to Apply?

Please submit your application, including your detailed CV with language skills, complete transcripts with lists of courses and grades, all theses that you have completed so far, a description of your background and research interests, and, if possible, references whom we may contact for letters of recommendation to recruiting@mais.informatik.tu-darmstadt.de .