Informatik-Kolloquium

Der Fachbereich Informatik der Johannes Kepler Universität Linz[1] lädt in Zusammenarbeit mit der Österreichischen Gesellschaft für Informatik (ÖGI) zu folgendem Vortrag ein:

Topic: **Self-verifying Systems: Challenges and Perspectives**

Presenter: **Prof. Dr. Christoph Lüth,** DFKI GmbH, Bremen, Germany

Datum: **Wednesday, February 27th 2019, 11:00**

Location: **JKU, Science Park 2, room S2 Z74**

Abstract:
Contemporary embedded or cyber-physical systems have become powerful and versatile. The resulting huge state space of these systems makes their verification very challenging if not impossible. A possible solution is to have systems verify their correctness _after_ deployment instead of during development; the key advantage of this is that the self-verifying system can take into account information about its deployment context, instantiate several system parameters, and so reduce the state space drastically. This raises several questions: how can we build such systems, how can we transfer specifications at development time into statements to be proven at run-time, and how can we instantiate parameters after deployment? In the talk, these questions will be addressed and first steps towards self-verifying systems will be presented, including a methodology on how to build and verify systems, case studies, and strategies how to reduce the state space most effectively.

Short Bio:
Christoph Lüth is vice director of the research department Cyber-Physical Systems group at the German Research Centre for Artificial Intelligence (Deutsches Forschungszentrum für Künstliche Intelligenz, DFKI) in Bremen.
His research covers the whole area of advanced system development, from theoretical foundations as found in category theory to the development of tools to construct or verify software, and applications in practical areas such as robotics. The overall theme of his work is how to reliably construct correct software.
He holds a PhD from the University of Edinburgh, and a Habilitation from the University of Bremen, where had been working as a lecturer (associate professor) prior to joining DFKI at the start of 2006. He has authored or co-authored over fifty peer-reviewed papers, and was the principal investigator in several research projects.
In addition to his work at DFKI, he is a professor for computer science at the University of Bremen, and is regularly teaching courses about functional programming and formal methods.

Einladender: Univ.-Prof. Dr. Robert Wille, Institut für Integrierte Schaltungen
Abteilung Integrierter Schaltungs- und Systementwurf

[1] Der Fachbereich (http://informatik.jku.at) besteht aus folgenden Instituten:
Application Oriented Knowledge Processing (FAW), Bioinformatics, Computational Perception, Computer Architecture, Applied Systems Research and Statistics, Computer Graphics, Formal Models and Verification, Networks and Security, Integrated Circuits, Pervasive Computing, Software Systems Engineering, System Software, Telecooperation, Signal Processing