

informatik-Kolloquium

The Department of Computer Science of Johannes Kepler University Linz¹ together with the Austrian Society of Computer Science (ÖGI) invites to the following talk:

Prof. Dr. Michael O'Boyle
University of Edinburgh

Using Constraints and Synthesis to Match Heterogeneous Hardware to Software

Tuesday, September 17, 2019, 14:00

Johannes Kepler University Linz, Computer Science Building S3 218

Abstract:

Moore's Law has been the main driver behind the extraordinary success of computer systems. However, with the technology roadmap showing a decline in transistor scaling and hence the demise of Moore's law, computer systems will be increasingly specialised and diverse. The consistent ISA contract is beginning to break down. As it stands, software will simply not fit. Current compiler technology, whose role is to map software to the underlying hardware is incapable of doing this. This looming crisis requires a fundamental rethink of how we design, program and use heterogeneous systems. This talk examines new ways of tackling heterogeneity using constraints and program synthesis.

About the Speaker:

Michael O'Boyle is a Professor of computer science at the University of Edinburgh. He is best known for his work in incorporating machine learning into compilation and parallelization, automating the design and construction of optimizing technology. He has published over 100 papers and received three best paper awards. He was presented with the ACM CGO Test of Time award in 2017 and 2019. He is a founding member of HiPEAC, the Director of the ARM Research Centre of Excellence at Edinburgh and Director of the EPSRC Centre for Doctoral Training in Pervasive Parallelism. He is a senior EPSRC Research Fellow and a Fellow of the BCS.

Host: o.Univ.- Prof. Dr. Hanspeter Mössenböck
Institute of Systemsoftware

¹The department consists of the following institutes:

Anwendungsorientierte Wissensverarbeitung (FAW), Bioinformatik, Computational Perception, Computer-Architektur, Computergrafik, Formale Modelle und Verifikation, Informationsverarbeitung und Mikroprozessortechnik (FIM), Integrierte Schaltungen, Pervasive Computing, Systems Engineering and Automation, Systemsoftware, Telekooperation