Title: Program Analysis with Derivatives

Speaker: Professor Martin Sulzmann  
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Chaired by: Dr Khoo Siau Cheng, Associate Professor, School of Computing  
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Abstract:

Brzozowski style derivatives offer a simple and elegant method to construct a finite automata from a regular expression. We will review the basics behind derivatives and consider various applications in the setting of dynamic and static program analysis. Thanks to the symbolic nature of the derivative approach, program analysis with derivatives offers good debugging support in case the analysis encounters an error. We report on our experiences of using derivative-based methods for constructive finite trace analysis and deadlock analysis.

Biodata:

Martin Sulzmann received a Dipl. Inf. from the University of Karlsruhe in 1996 and a PhD from Yale University in 2000. He was lecturer at the University of Melbourne from 2000-2002, Assistant Professor at the National University of Singapore from 2002-2007, and Associate Professor at the IT University of Copenhagen in 2008. After a 3 1/2 year stint in industry, Martin returned to academia. He is now a Professor at the Karlsruhe University of Applied Sciences. Martin's primary research area are programming languages, program analysis and software verification.