NATIONAL UNIVERSITY OF SINGAPORE

School of Computing

C S   S E M I N A R

Title: **Program Analysis with Derivatives**

Speaker: Professor Martin Sulzmann
                Karlsruhe University of Applied Sciences

Date/Time: 2 December 2016, Friday, 01:30 PM to 02:30 PM

Venue: SR@LT19

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.