NATIONAL UNIVERSITY OF SINGAPORE

School of Computing

C S S E M I N A R

Title: **Emerging Non-Volatile Memory in Embedded Systems**

Speaker: Zili Shao
            Associate Professor
            Hong Kong Polytechnic University

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Venue: SR8, COM1-02-08

Chaired by: Dr Mitra, Tulika, Professor, School of Computing
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Abstract:

Emerging non-volatile memory is driving a memory/storage revolution, and may fundamentally change the architecture of computer systems. In this talk, I will introduce our recent work in utilizing emerging non-volatile memory for designing and optimizing embedded systems. In particular, two techniques, DHeating: a wear-leveling technique for Self-healing NAND flash and vFlash: Virtualized Flash with non-volatile memory, will be presented. In DHeating, we propose for the first time a new wear-leveling scheme to solve the concentrated heating problem in self-healing flash memory. In vFlash, we propose a transparent and cross-layer management scheme for utilizing non-volatile memory for I/O optimization in smartphones.

Biodata:

Zili Shao received the Ph.D. degree from the Department of Computer Science, University of Texas at Dallas, in 2005. Currently, he is an associate professor and associate head at the Department of Computing in the Hong Kong Polytechnic University. His research interests include embedded software and systems, real-time systems, and related industrial applications. He is an associate editor in IEEE Transactions on Computers, ACM Transactions on Design Automation of Electronic Systems, ACM Transactions on Cyber-Physical Systems, and IEEE Embedded Systems Letters, and serves/served technical program committees of many top conferences in the real-time embedded systems field such as RTSS, RTAS, DAC, ICCAD, DATE, CODES+ISSS, EMSOFT, ISLPED, ASP-DAC and LCTES.