

RTCSA 2015The 21st IEEE International Conference on Embedded and Real-Time Computing Systems and Applications**CPSNA 2015**The 3rd IEEE International Conference on Cyber-Physical Systems, Networks and Applications**NVMSA 2015**The 4th IEEE Non-Volatile Memory System and Applications Symposium

19 – 21 August 2015, Hong Kong



RTCSA / CPSNA / NVMSA 2015 Program

Level 2, Academic and Administration Building, Baptist University Road Campus
Hong Kong Baptist University

Aug. 19 (WED)	AAB201	AAB203	AAB204
08:30-09:30	Registration		
09:30-10:30	Keynote Speaker1 (AAB201)		
10:30-11:00	Coffee Break		
11:00-12:30	RTCSA Session 1	CPSNA Session 1	NVMSA Session 1
12:30-14:30	Lunch		
14:30-16:00	RTCSA Session 2	CPSNA Session 2	NVMSA Session 2
16:00-16:30	Coffee Break		
16:30-18:00	RTCSA Session 3	CPSNA Session 3	NVMSA Session 3
18:30-20:00	Reception (Light Refreshments)		
Aug. 20 (THU)	AAB201	AAB203	AAB204
08:30-09:30	Registration		
09:30-10:30	Keynote Speaker2 (AAB201)		
10:30-11:00	Coffee Break		
11:00-12:30	RTCSA Session 4	CPSNA Session 4	NVMSA Session 4
12:30-14:30	Lunch		
14:30-16:30	RTCSA Session 5	CPSNA Session 5	NVMSA Poster Session (AAB205)
16:30-18:00	Local Tour		
18:30-20:00	Banquet		
Aug. 21 (FRI)	AAB201	AAB203	AAB204
08:30-09:30	Registration		
09:30-10:30	Keynote Speaker3 (AAB201)		
10:30-11:00	Coffee Break		
11:00-12:30	RTCSA Session 6	CPSNA Session 6	NVMSA Session 5
12:30-14:30	Lunch		
14:30-16:00	RTCSA Session 7	CPSNA Session 7	NVMSA Session 6
16:00-16:30	Coffee Break		
16:30-18:00	RTCSA Session 8		RTCSA Session 9
18:30-20:00	SC, OC & PC Dinner Meeting (Invitation Only)		

Hosted By:



香港浸會大學
HONG KONG BAPTIST UNIVERSITY
計算機科學系
Department of Computer Science



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<http://www.rtcsa.org>
<http://www.cpsna.org>
<http://nvmsa.comp.polyu.edu.hk>

WEDNESDAY, AUGUST 19th

09:30-10:30	Keynote Speaker1 (AAB201)
09:30-10:30	<p style="text-align: center;">Fast Data Accesses in Memory and Storage Xiaodong Zhang</p>
11:00-12:30	<p style="text-align: center;">RTCSA Session 1 (AAB201, Real-Time Systems Track): Multi-Core and Multiprocessor Systems</p>
11:00-11:30	<p style="text-align: center;">R1.1 On the Soft Real-Time Optimality of Global EDF on Multiprocessors: From Identical to Uniform Heterogeneous Kecheng Yang and Jim Anderson</p>
11:30-12:00	<p style="text-align: center;">R1.2 Bounding Carry-in Interference to Improve Fixed-Priority Global Multiprocessor Scheduling Analysis Nan Guan, Meiling Han, Chuancai Gu, Qingxu Deng and Wang Yi</p>
12:00-12:30	<p style="text-align: center;">R1.3 Enhanced Fault-Tolerant Fixed-Priority Scheduling of Hard Real-Time Tasks on Multi-Core Platforms Qiushi Han, Tianyi Wang and Gang Quan</p>
14:30-16:00	<p style="text-align: center;">RTCSA Session 2 (AAB201, Embedded System Track):</p>
14:30-15:00	<p style="text-align: center;">R2.1 Schedulability Analysis for Real-Time P-FRP Tasks Under Fixed Priority Scheduling Yu Jiang, Albert M. K. Cheng and Xingliang Zou</p>
15:00-15:30	<p style="text-align: center;">R2.2 Smart^2: Smart charging for smart phones Alma Proebstl, Philipp Kindt, Emanuel Regnath and Samarjit Chakraborty</p>
15:30-16:00	<p style="text-align: center;">R2.3 C3: Cooperative Code Positioning and Cache Locking for WCET Minimization Fuyang Li, Mengying Zhao and Chun Jason Xue</p>
16:30-18:00	<p style="text-align: center;">RTCSA Session 3 (AAB201, System Design Practice and Emerging Applications Track):</p>
16:30-17:00	<p style="text-align: center;">R3.1 Fair-share Scheduling for Performance-asymmetric Multicore Architecture via Scaled Virtual Runtime Myungsun Kim, Soonhyun Noh, Sungju Huh and Seongsoo Hong</p>
17:00-17:30	<p style="text-align: center;">R3.2 Memory Pressure Balancing on Virtualized Servers Tzicker Chiueh</p>
17:30-18:00	<p style="text-align: center;">R3.3 A Cloud-Based Offloading Service for Computation-Intensive Mobile Applications Bo-Kai Huang, Chih-Chuan Cheng, Chun-Han Lin and Pi-Cheng Hsiu</p>
11:00-12:30	<p style="text-align: center;">CPSNA Session 1 (AAB203, CPSNA Keynote Session)</p>
11:00-11:45	<p style="text-align: center;">C1.1 Cross-Layer Design of Distributed Cyber-Physical Systems: From Physical Models to Semiconductor Reliability Samarjit Chakraborty</p>
11:45-12:30	<p style="text-align: center;">C1.2 Internet of Things (IoT) Revolution toward Hyper-connected World Kang-Won Lee</p>
14:30-16:00	<p style="text-align: center;">CPSNA Session 2 (AAB203, Research Session 1 - Smartphones and Wearable Devices)</p>
14:30-15:00	<p style="text-align: center;">C2.1 Elastic Computation Middleware for Interactive Wearable Devices in Cyber-Physical Systems Chi-Sheng Daniel Shih, Yu-Hsin Wang, Chang-Min Yang, and Shao-Hao Chao</p>
15:00-15:30	<p style="text-align: center;">C2.2 Formal Analysis of Android Application Behavior with Real-Time Maude Shin Nakajima</p>
15:30-16:00	<p style="text-align: center;">C2.3 XFace: A Face Recognition System for Android Mobile Phones Jiawei Hu, Liangrui Peng, and Li Zheng</p>
16:30-18:00	<p style="text-align: center;">CPSNA Session 3 (AAB203, Research Session 2 - Realtime Computing)</p>
16:30-17:00	<p style="text-align: center;">C3.1 A Real-Time Operating System with GNSS-Based Tick Synchronization Takanori Yokoyama, Ayane Matsubara, and Myungryun Yoo</p>
17:00-17:30	<p style="text-align: center;">C3.2 Multi-level QoS Support with Variable Window Size in Weakly Hard Real-Time Systems Nga Dang, Eli Bozorgzadeh, and Moonju Park</p>

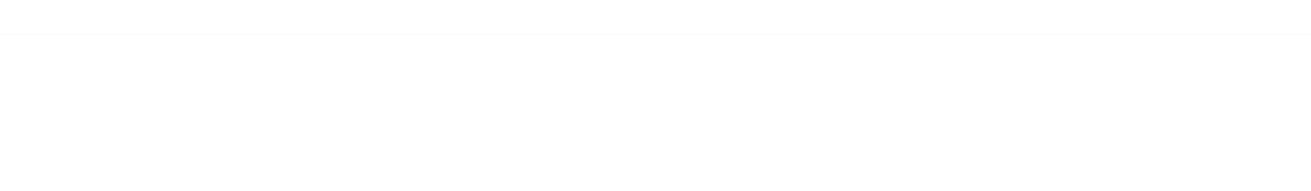
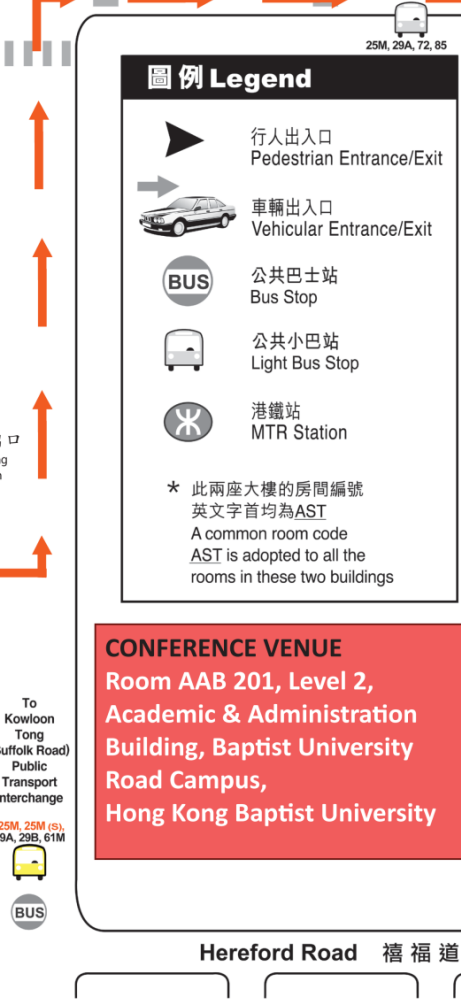
17:30-18:00	C3.3 A Non-Visual Sensor Triggered Life Logging System Using Canonical Correlation Analysis Inhwan Hwang and Songhwa Oh
11:00-12:30	NVMSA Session 1 (AAB204, NVM-Aware File Systems and Data Processing)
11:00-11:30	N1.1 Designing an Efficient Persistent In-Memory File System Edwin Sha, Xianzhang Chen, Qingfeng Zhuge, Liang Shi and Weiwen Jiang
11:30-12:00	N1.2 Stream Query Processing on Emerging Memory Architectures Bruce Childers, Chelsea Mafra, John Johnson, Santiago Bock, Thao Pham, Panos Chrysanthis and Alexandros Labrinidis
12:00-12:30	N1.3 MobiLock: An Energy-aware Encryption Mechanism for NVRAM-based Mobile Devices Xianlu Luo, Duo Liu, Liang Liang, Yang Li, Kan Zhong and Linbo Long
14:30-16:00	NVMSA Session 2 (AAB204, I/O Scheduling and Wear Leveling)
14:30-15:00	N2.1 Workload-Aware Budget Compensation Scheduling for NVMe Solid State Drives Byunghui Jun and Dongkun Shin
15:00-15:30	N2.2 Mixer: Software Enabled Wear Leveling for Morphable PCM in Embedded Systems Linbo Long, Duo Liu, Liang Liang, Kan Zhong, Xiao Zhu and Edwin Sha
15:30-16:00	N2.3 Energy Efficient Task Allocation for Hybrid Main Memory Architecture Xiaojun Cai, Lei Ju, Xin Li, Zhiyong Zhang and Zhiping Jia
16:30-18:00	NVMSA Session 3 (AAB204, Architectural/Circuit Exploration and Optimization)
16:30-17:00	N3.1 Read Disturbance Issue for Nanoscale STT-MRAM Yi Ran, Wang Kang, Youguang Zhang, Jacques-Olivier Klein and Weisheng Zhao
17:00-17:30	N3.2 Improving MLC PCM Write Throughput by Write Reconstruction Huizhang Luo, Liang Shi, Mengying Zhao, Qingfeng Zhuge and Chun Xue
17:30-17:45	N3.3 HMMSim: A Simulator for Hardware-Software Co-Design of Hybrid Main Memory (short) Santiago Bock, Bruce Childers, Rami Melhem and Daniel Mosse
17:45-18:00	N3.4 STT-MRAM Cell Design with Partial Source Line Planes: Improving the Trade-Off between Area and Series Resistance (short) Raf Appeltans, Stefan Cosemans, Praveen Raghavan, Diederik Verkest, Liesbet Van der Perre and Wim Dehaene
THURSDAY, AUGUST 20th	
09:30-10:30	Keynote Speaker2 (AAB201)
09:30-10:30	When Bits meet Joules: A view from data center operations' perspective Steve, Xue Liu
11:00-12:30	RTCSA Session 4 (AAB201, Real-Time Systems Track): Virtualization
11:00-11:30	R4.1 Responsive and Enforced Interrupt Handling for Real-Time System Virtualization Hyoseung Kim, Shige Wang and Raj Rajkumar
11:30-12:00	R4.2 Bi-Level Deadline Scaling for Admission Control in Mixed-Criticality Systems Alejandro Masrur, Dirk Mueller and Matthias Werner
12:00-12:30	R4.3 Overhead-aware schedulability evaluation of semi-partitioned real-time schedulers Pedro Souto, Paulo Sousa, Rob Davis, Konstantinos Bletsas and Eduardo Tovar
14:30-16:30	RTCSA Session 5 (AAB201, Short Papers):
14:30-14:50	R5.1 Hard real-time multiprocessor scheduling resilient to core failures Borislav Nikolic, Konstantinos Bletsas and Stefan M. Petters
14:50-15:10	R5.2 On Component-Based Software Development for Multiprocessor Real-Time Systems Nima Khalilzad, Moris Behnam and Thomas Nolte

15:10-15:30	R5.3 A Memory Access Detection Methodology for Accurate Workload Characterization Marco Cesati, Renato Mancuso, Emiliano Betti and Marco Caccamo
15:30-15:50	R5.4 End-to-end Timing Analysis of Black-box Models in Legacy Vehicular Distributed Embedded Systems Saad Mubeen, Mikael Sjodin, Thomas Nolte, John Lundbäck, Mattias Gålnander and Kurt-Lennart Lundbäck
15:50-16:10	R5.5 Reconfigurable Communication Middleware for FlexRay-based Distributed Embedded Systems Diptesh Majumdar, Licong Zhang, Purandar Bhaduri and Samarjit Chakraborty
16:10-16:30	R5.6 Ballroom Intersection Protocol: Synchronous Autonomous Driving at Intersections Reza Azimi, Gaurav Bhatia and Rangunathan (Raj) Rajkumar
11:00-12:30	CPSNA Session 4 (AAB203, Invited Session)
11:00-11:30	C4.1 Broadcast Control of Multi-Agent Systems: A Key Technology for Cyber-Physical Systems (Invited Talk) Shun-ichi Azuma
11:30-12:00	C4.2 An Interdisciplinary Approach for Thermal Comfort and Energy Conservation in Buildings (Invited Talk) Dan Wang
12:00-12:30	C4.3 Reliable CPS Design for Mitigating Semi-Conductor and Battery Aging in Electric Vehicles (Invited Position Paper) Wanli Chang, Alma Proebstl, Dip Goswami, Majid Zamani, and Samarjit Chakraborty
14:30-16:30	CPSNA Session 5 (AAB203, Industry Session & WiP Session)
14:30-15:00	C5.1 Large-scale CPS based on Data-centric Communication Middleware (Invited Talk) Won-Tae Kim
15:00-15:30	C5.2 Agile Factory - An Example of an Industry 4.0 Manufacturing Process Constantin Scheuermann, Stephan Verclas, and Bernd Brügge
15:30-16:30	C5.3 Work-in-Progress Session
11:00-12:30	NVMSA Session 4 (AAB204, Invited Session 1 - Emerging NVM and Nonvolatile Processors)
11:00-11:30	N4.1 Leveraging Nonvolatility for Architecture Design with Emerging NVM Shuangchen Li, Ping Chi, Jishen Zhao, and Yuan Xie
11:30-12:00	N4.2 Design Exploration of Inrush Current Aware Nonvolatile Controller for Nonvolatile Processor Yongpan Liu, Su Fang, Zhibo Wang, Huazhong Yang
12:00-12:30	N4.3 Exploring Data Placement in Racetrack Memory based Scratchpad Memory Haiyu Mao, Chao Zhang, Guangyu Sun, and Jiwu Shu
14:30-16:30	NVMSA Poster Session (AAB205)
	Relay-based Key Management to Support Secure Deletion for Low-end Flash-Memory Storage Devices Wei-Lin Wang, Yuan-Hao Chang, Po-Chun Huang, Chia-Heng Tu, Hsin-Wen Wei and Wei-Kuan Shih
	A Design Guideline for Volatile STT-RAM with ECC and Scrubbing Namhyung Kim and Kiyong Choi
14:30-16:30	Multi-version Checkpointing for Flash File Systems Shih-Chun Chou, Yuan-Hao Chang, Yuan-Hung Kuan, Po-Chun Huang, Che-Wei Tsao and Shih-Hao Hung
	FFSMARK: a Postmark Extension for Dedicated Flash File Systems Pierre Olivier and Jalil Boukhobza
FRIDAY, AUGUST 21st	
09:30-10:30	Keynote Speaker3 (AAB201)
09:30-10:30	WInternet: From Net of Things to Internet of Things Wei Zhao

11:00-12:30	RTCSA Session 6 (AAB201, Real-Time Systems Track): Schedulability 1
11:00-11:30	R6.1 Techniques for Schedulability Analysis in Mode Change Systems under Fixed-Priority Scheduling Wen-Hung Huang and Jian-Jia Chen
11:30-12:00	R6.2 EDF Schedulability Analysis on Mixed-Criticality Systems with Permitted Failure Probability Zhishan Guo, Luca Santinelli and Kecheng Yang
12:00-12:30	R6.3 Schedulability Analysis for Real-time Task Set on Resource with Performance Degradation and Periodic Rejuvenation Xiayu Hua, Chunhui Guo, Hao Wu, Douglas Lautner and Shangping Ren
14:30-16:00	RTCSA Session 7 (AAB201, Real-Time Systems Track): Schedulability 2
14:30-15:00	R7.1 Improving WCET Analysis Precision through Automata Product Vincent Mussot and Pascal Sotin
15:00-15:30	R7.2 Tracing Flow Information for Tighter WCET Estimation: Application to Vectorization Hanbing Li, Isabelle Puaut and Erven Rohou
15:30-16:00	R.3 Priority-Based Functional Reactive Programming (P-FRP) using Deferred Abort Hing Choi Wong and Alan Burns
16:30-18:00	RTCSA Session 8 (AAB201, Real-Time Systems Track): Interdisciplinary
16:30-17:00	R8.1 A Stochastic Response Time Analysis for Communications in On-Chip Networks Meng Liu, Moris Behnam and Thomas Nolte
17:00-17:30	R8.2 Exploiting Job Response-Time Information in the Co-Design of Real-Time Control Systems Yang Xu, Karl-Erik Arzén, Anton Cervin, Enrico Bini and Bogdan Tanasa
17:30-18:00	R8.3 EDF-PStream: Earliest deadline first scheduling of preemptable data streams - Issues related to automotive applications Akihiro Yamaguchi, Yukikazu Nakamoto, Kenya Sato, Yousuke Watanabe and Hiroaki Takada
16:30-18:00	RTCSA Session 9 (AAB204): Work-in-Progress Session
16:30-16:48	R9.1 WiP Abstract: Adaptive Routing of Real-Time Traffic on a 2D-Mesh Based NoC Matthias Becker, Meng Liu, Moris Behnam and Thomas Nolte
16:48-17:06	R9.2 WiP Abstract: Towards Stochastic Response Time Analysis for CAN Messages with Multiple Probabilistic Factors Meng Liu, Saad Mubeen, Moris Behnam and Thomas Nolte
17:06-17:24	R9.3 WiP Abstract: Towards Efficient Data Dissemination using the Cooperation among Multiple Roadside Units Byungjin Ko, Kai Liu, Haengju Lee and Sang Hyuk Son
17:24-17:42	R9.4 WiP Abstract: Brushless Motor Control using RTM and TECS Ryo Hasegawa, Hiroshi Oyama and Takuya Azumi
17:42-18:00	R9.5 WiP abstract: Which switched Ethernet technology for a given embedded system? HE Feng, Jean-Luc Scharbarg and Christian Fraboul
11:00-12:30	CPSNA Session 6 (AAB203, Research Session 3 - Systems and Applications)
11:00-11:20	C6.1 HexaCam: An FPGA-based Multi-view Camera System Abraham Monrroy, Manato Hirabayashi, Shinpei Kato, Masato Edahiro, Takefumi Miyoshi, and Satoshi Funada
11:20-11:40	C6.2 Distributed Sensing of Fluid Dynamic Phenomena with the XDense Sensor Grid Network Joao Loureiro, Raghuraman Rangarajan, and Eduardo Tovar
11:40-12:00	C6.3 Real-Time Visualization of Moving Objects Patricia Ortal, Shinpei Kato, and Masato Edahiro
12:00-12:20	C6.4 Adaptive Periodic Communication over MQTT for Large-Scale Cyber-Physical Systems Hyun-Chul Jo and Hyun-Wook Jin

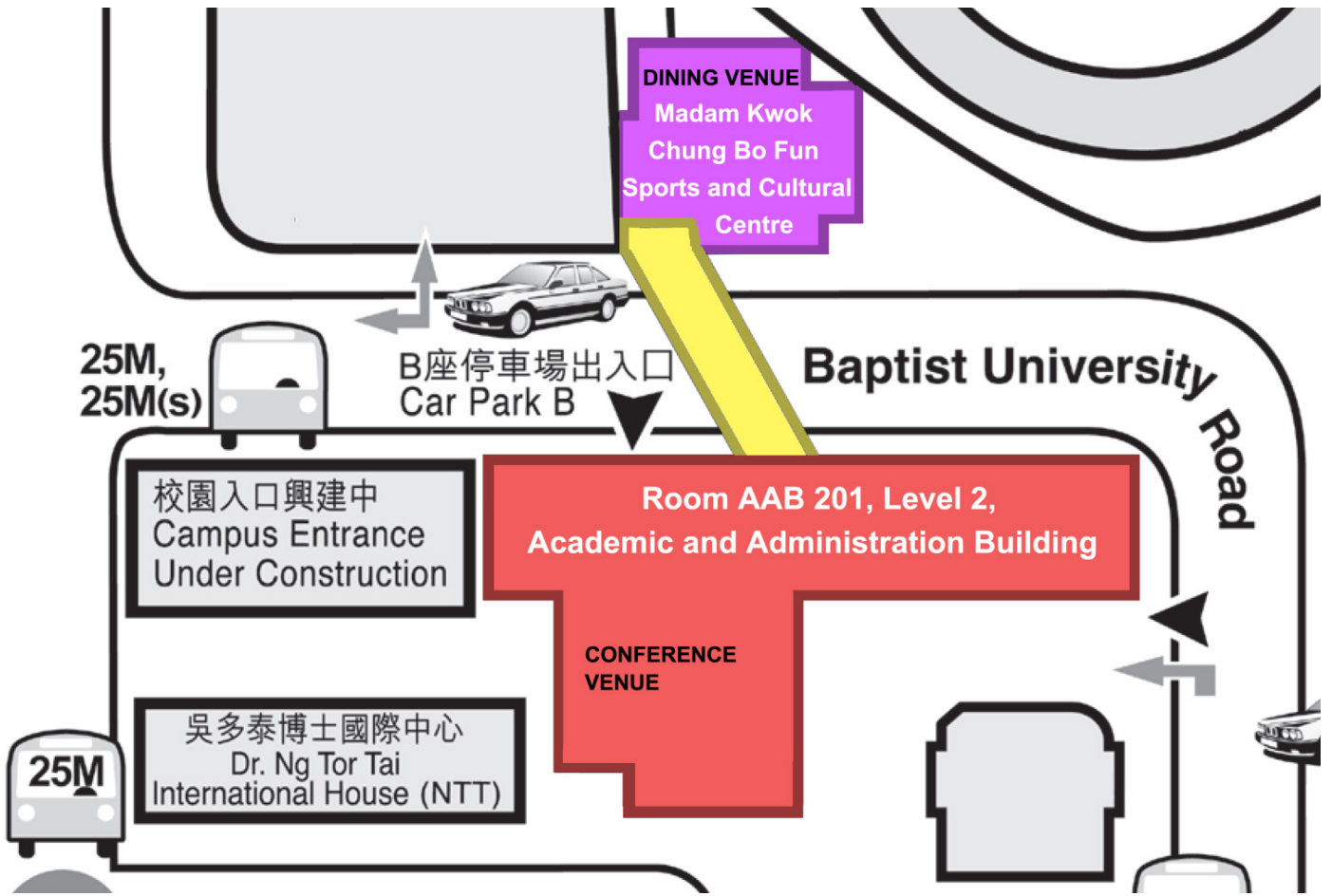
14:30-16:00	CPSNA Session 7 (AAB203, Research Session 4 - Performance and Multicores)
14:30-15:00	C7.1 Intra-Operation Dynamic Voltage Scaling Daniel Moore and Alexander Dean
15:00-15:30	C7.2 Racing and Pacing to Idle: Multicore Energy Optimization Under Performance Constraints David H. K. Kim, Connor Imes, and Henry Hoffmann
15:30-16:00	C7.3 MEDUSA: A Predictable and High-Performance DRAM Controller for Multicore based Embedded Systems Prathap Kumar Valsan and Heechul Yun
11:00-12:30	NVMSA Session 5 (AAB204, Software Optimization for NAND Flash)
11:00-11:30	N5.1 FlashDefibrillator: A Data Recovery Technique for Retention Failures in NAND Flash Memory Jaeyong Jeong, Youngsun Song and Jihong Kim
11:30-11:50	N5.2 Data-centric garbage collection for NAND flash-based devices (short) Chundong Wang, Qingsong Wei, Mingdi Xue, Jun Yang and Cheng Chen
11:50-12:10	N5.3 A Software-Defined Fusion Storage System for PCM and NAND Flash (short) Zheng Li, Shuangwu Zhang, Jingning Liu, Wei Tong, Yu Hua, Dan Feng and Chenye Yu
12:10-12:30	N5.4 NVM Aware MariaDB Database System (short) Jan Lindström, Dhananjoy Das, Torben Mathiasen and Nisha Talagala
14:30-16:00	NVMSA Session 6 (AAB204, Invited Session 2 - Hybrid Memory and Multi-chip Flash)
14:30-15:00	C6.1 A Buffer Cache Architecture for Smartphones with Hybrid DRAM/PCM Memory Ye-Jyun Lin, Chia-Lin Yang, Hsiang-Pang Li and Cheng-Yuan Michael Wang
15:00-15:30	C6.2 Allocation and Scheduling of Real-Time Tasks with Volatile/Non-Volatile Hybrid Memory Systems Yuhan Lin, Nan Guan and Qingxu Deng
15:30-16:00	C6.3 Logical Data Packing for Multi-chip Flash-memory Storage Systems Ming-Chang Yang, Yuan-Hao Chang, Yu-Cheng Chang, and Po-Chun Huang

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