Invited Speaker

Towards greener data centers – problems and approaches

Prof. Nguyen Huu Thanh

Department of Communication Engineering
School of Electronics and Telecommunications
Hanoi University of Science and Technology, Vietnam

Abstract

Cloud computing and other data services in the recent years have become increasingly popular owing to the evolution of data center and parallel computing paradigms. New data center and cloud-based multimedia applications such as Video on Demand (e.g., YouTube), online storage and other cloud services etc., are becoming more common and are requiring additional network and server resources. Furthermore, data center networks nowadays are specifically designed to be extremely over dimensioned in terms of switching capacity and of number of deployed links and nodes to guarantee zero-loss and minimum latency packet forwarding. Thus, recent surveys have shown that the energy consumption in a data center considerably contributes to its operation costs. A remarkable part of the large energy volume consumed in data centers today is due to the over-provisioning of such network resources as switches, links, and servers to meet the stringent requirements on reliability. Therefore performance and energy issues are important factors for the design of large multi-tier data centers that can support multiple services.

The tutorial is divided into two parts. In the first part of the talk, we address the motivations for current research activities on the areas of Green ICT. Recent hot research topics for energy-efficient networking, especially green data centers and clouds will also be discussed. In the second part, experiences and research results on the areas of Green Networking at the Future Internet research group (HUST) will be shared, including data center traffic measurement and modeling, energy profiling of network devices, energy-aware testbed, protocols and optimization algorithms.

Biography

Nguyen Huu Thanh received B.S and M.Sc in Electrical Engineering from Hanoi University of Science and Technology, Vietnam in 1993 and 1995, respectively. In 2002, he received his PhD with summa cum laude in Computer Science from the University of Federal Armed Forces Munich (Germany). From 2002 to 2004 he has been with the Fraunhofer Institute for Open Communication Systems (FOKUS) in Berlin, Germany. From 2004 Nguyen Huu Thanh has been working as associate professor in the School of Electronics and Telecommunications, HUST. His research interests include radio resource management in 4G systems, QoS/QoE, the Future Internet, energy-efficient networking and software-defined networking. He is currently member of KICS (Korea), executive committee member of the Radio Electronics Association of Vietnam (REV) and Chair of IEEE Vietnam Section.
# PROGRAM SCHEDULE FOR FUTURETECH & MUE 2015

## Day 1, May 18, 2015

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<td>14:40-15:20</td>
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<td>Keynote: Towards greener data centers – problems and approaches Prof. Nguyen Huu Thanh Department of Communication Engineering School of Electronics and Telecommunications Hanoi University of Science and Technology</td>
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<td>Session C-3 MUE Chair :</td>
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<td>19:00-21:00</td>
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## Day 2, May 19, 2015

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<td>Session B-4</td>
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<td>Organizing Committee Meeting</td>
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1. A paper presentation should be made by one of authors of the paper for 20 minute (15 minutes for the presentation itself and 5 minutes for Q/A).
2. All speakers of each session should meet the session chair at their room 10 minutes before the session begins.
3. Windows 7 laptops running the Adobe Reader and Microsoft Office for paper presentations will be prepared. Please prepare for your presentation.
DETAILED SCHEDULE FOR
THE 10TH INTERNATIONAL CONFERENCE ON FUTURE
INFORMATION TECHNOLOGY (FUTURETECH 2015)
AND
THE 9TH INTERNATIONAL CONFERENCE ON
MULTIMEDIA AND UBIQUITOUS ENGINEERING (MUE-15)

Day 1, May 18, 2015 (Monday)

12:40-13:00  Registration

13:00-14:30  Session A-1 : FT
(HALL A)
(Chair: TBA)

1. The study on the detection of the damaged file using the graph of the information entropy for Security Management
   Chae Ho Cho, Sungsuk Kim, Seonmi Han, Kwang Sik Chung

2. Development of a Bidirectional Transformation Supporting Tool for Formalization with Logical Formulas and Its Application
   Shunsuke Nanaumi, Kazunori Wagatsuma, Hongbiao Gao, Yuichi Goto, Jingde Cheng

3. An Extension of QSL for E-Testing and its Application in an Offline E-testing Environment
   Zhe Wang, Yuan Zhou, Bo Wang, Yuichi Goto, Jingde Cheng

4. Enhancing Dataset Processing in Hadoop YARN Performance for Big Data Applications
   Ahmed Absi, Dae-Ki Kang

5. A Tasking Deadlock Detector for Ada 2012 Programs
   Bo Wang, Takeo Ekiba, Yuichi Goto, Jingde Cheng

6. Automated Theorem Finding by Forward Reasoning Based on Strong Relevant Logic: A Case Study in Graph Theory
   Hongbiao Gao, Yuichi Goto, Jingde Cheng

7. A Middleware supporting Query Processing on Distributed CUBRID
   Hyeong-Il Kim, Min Yoon, YoungSung Shin, Jae-Woo Chang

8. Many-to-Many Data Collection for Mobile Users in Wireless Sensor Networks
   Chi-Fu Huang, Wei-Chen Lin

9. A Study on the Performance Analysis of a V2V-Communication-Based Autonomous Emergency Braking System for High-Speed Driving under Various Road Surface Conditions
   Hyeonggeun Mun, Byeongwoo Kim

13:00-14:30  Session B-1 : FT
(HALL B)
(Chair: TBA)
1. Study of Censorship in Named Data Networking  
   Xingmin Cui, Lucas C.K. Hui, S.M. Yiu, Yu Hin Tsang

   In-Ho Choi, Chan-Hee Jeong, Yong-Guk Kim

3. The Disaster Rescue Robot Design and Implementation Using Open Source  
   Yung-Hui Chen, Jyu-Wei Wang

4. The Direct and Indirect Effects of Perceived Usability of Smartphone Applications on User Satisfaction  
   Wonjin Jung, Taehwan Kim

5. A Multimetric Approach for Discriminating Distributed Denial of Service Attacks from Flash Crowds  
   Mourad Elhadef

6. A New Query Integrity Verification Method for Encrypted Data in Database Outsourcing  
   Miyoung Jang, Min Yoon, Youngho Song, Jae-Woo Chang

7. Preventing Private Information in Secure Dissemination  
   Hye-Kyeong Ko

   Jinhyung Park, Joon-Min Gil, Woohyun Kim, Jeongwook Park, Hyunhun Cho

9. Proposal and Validation of AEB System Algorithm for Various Slope Environments  
   Ming Lin, Jaewoo Yoon, Byeongwoo Kim

13:00-14:30  Session C-1 : MUE  
(HALL C)  
(Chair: TBA)

1. Real-time virtual Lego brick manipulation based on hand gesture recognition  
   Van-Thanh Tran, Dongho Kim, Young-Sik Jeong

2. Equivalent Test Model of Wireless Optical Communication System for Automotive Environment  
   Sangyub Lee, Jaekyu Lee, Duckkeun Park, Jaejin Ko

3. Feasibility Study of Non-linear Apodization for IVUS B-mode Imaging  
   Jin Ho Sung, Seon Mi Ji, Chan Yuk Park, Sung Yun Park, Sung Min Kim, Won Seuk Jang, Byeong Cheol Choi, Jong Seob Jeong

4. An Empirical Study of Impacts of Intention to Use Smart Health Care Services  
   Yoojin Moon, Young-Ho Hwang, Sungkap Cho

5. Lightweight Context-aware Activity Recognition  
   Byung Gill Go, Asad Masood Khattak, Babar Shah

6. Efficient Sliding Window Join in Data Stream Processing  
   Hyeon Gyu Kim

7. The Effect of the User Interface Design of Smartphone Applications on Users’ Individual Experiences of Performance  
   Wonjin Jung

8. A Design and Development of Secure-Coding Check System Based on CVE and CWE  
   Hyungjoo Kim, Moonseog Jun

9. Lightweight Encryption Technique for Content Security in Open IPTV Environment  
   Jaewoo Kim, Younggu Lee, Moonseog Jun
14:30-14:40 Coffee break

14:40-15:20 Keynote
(HALL A)
(Chair: TBA)

“Towards greener data centers – problems and approaches”

Prof. Nguyen Huu Thanh,
Department of Communication Engineering
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15:20-16:50 Session A-2 : FT
(HALL A)
(Chair: TBA)

1. Design and Performance Evaluation of a VANET-based Adaptive Overtaking Assistance System
   Ihn-Han Bae, Jae-Kon Lee

2. Cyber Security Modeling for the Operation of Virtualized Trusted Networks (VTN)
   Yong-Hee Jeon

3. A Discovery Support Scheme for Inter-domain DDS Gateways in Cyber-Physical Systems
   Wooyeob Lee, Sungmoon Chung, Sungryung Cho, Inwhee Joe, Jeman Park

4. Residual Histogram Shifting Technique Based on Cascading Prediction for Reversible Data Hiding
   Yu-Chen Hu, PiYu Tsai, Jieh-Shan Yeh, Wu-Lin Chen

5. Vulnerability Analysis on Smartphone Fingerprint Templates
   Young-Hoo Jo, Sung-Yun Jeon, Jong-Hyuk Im, Mun-Kyu Lee

6. Incremental Multilevel Association Rule Mining of a Dynamic Database under a Change of a Minimum Support Threshold
   Nophadon Punjun, Worapoj Kreesuradej

7. Compressing Method of NetCDF Files containing Clustered Sparse Matrix
   Suntae Hwang, Gyuyeun Choi, Daeyoung Heo

8. A Design and Implementation of lightweight ENC for Android App
   Moonsub Song, Kwangil Lee, Byungtae Jang, Soonghwan Ro

   Kazunori Wagatsuma, Tsubasa Harada, Shogo Anze, Yuichi Goto, Jingde Cheng

15:20-16:50 Session B-2 : FT
(HALL C)
(Chair: TBA)
1. Alternative way to manage the research documents  
   Jeong Ah Kim, Jae-Young Choi, Jong-Won Ko, Sun-Tae Kim, Young-Hwa Cho

2. R&D Project Management using Context in Document: Research Descriptor  
   Jeong Ah Kim, Jae-Young Choi, Jong-Won Ko, Sun-Tae Kim, Young-Hwa Cho

3. Research Descriptor based Project Management Approach for R&D Projects  
   Jong-Won Ko, Jae-Young Choi, Jeong-Ah Kim, Sun-Tae Kim, Young-Hwa Cho

4. Attributes for Characterizing Java Methods  
   Illo Lee, Suntae Kim, Sooyong Park, Younghwa Cho

5. A study on Real Time Circular Motion in Robots using Kalman Filters  
   Malrey Lee, Suntae Kim, Younghwa Cho

6. A Study on Traceability Between Documents of a Software R&D Project  
   Suntae Kim, HyunYoung Kim, Jeong Ah Kim, Younghwa Cho

7. Integrated Information Retrieval for Distributed Heterogeneous Ontology System  
   Sang-Won Hwang, Young-Kwang Nam, Lee-Nam Kwon, Jae-Soo Kim, Byoung-Dai Lee

8. Research on Design of LTE-based High-Speed Railway Networks in Korea: Current and emerging issues  
   Jin-Kyu Choi, Hanbyeo Cho, Hyun-Seo Oh, Kyong-Ho Kim, Heung-Gyoon Ryu

9. Development of a quantitative evaluation method for vehicle control systems based on road information  
   Jinyong Kim, Changhyun Jeong, Dohyun Jung, Byeongwoo Kim

15:20-16:50 Session C-2 : MUE  
(HALL B)  
(Chair: TBA)

1. RDEA: A Novel Video Encryption Algorithm  
   Zhiyong Li, Xingjun Wang, Yuxi Lin, Chao Cheng

2. Embedding Data into Audio Signal by Combining Sliding Window Technique with a Novel Marking Bit Method  
   Vu Van Tam, Duc-Tan Tran, Nguyen Thanh Thuy, Phan Trong Hanh

3. A Study on the Hierarchical Structure of Conditional Replenishment A for SC-MMH 3DTV System  
   Kyeong-Hoon Jung, Sung-Hoon Kim, Dong-Wook Kang

4. Performance Comparison for CFDP NAK Modes in Deep Space Communications  
   Yong Li, Kyungrak Lee, Yantao Kan, Inwhee Joe, Yeonyi Choi

5. The Design and Implementation of Mesh-based DTN for Disaster Situations  
   Jaewon Lee, Abdul Aziz, Suoning Ma, Inwhee Joe, Yeonyi Choi

6. A Fire Evacuation Guidance System based on Ubiquitous Sensor Networks  
   Yeonyi Choi, Seokjoon Hong, Inwhee Joe

   Seok-il Oh, Kang Yi, Kyeong-Hoon Jung

8. Stage Image Control System By Visual Tracking  
   Sooyeon Lim

9. Lightweight mutual authentication routing protocols design based on LEACH in sensor network environment  
   Jaeseung Lee, Jae-pyo Park, Eunhwan Kim, Moon-seog Jun
16:50-17:00 Coffee break

17:00-18:30 Session A-3 : FT
(HALL A)
(Chair: TBA)
1. Possibility of Using Embedded Sensors of Smart Devices for Augmented Reality Application
   Ondrej Bilek, Ondrej Krejcar
2. Economic and Technological Aspects of Social Networks in European business sector
   Petra Maresova
3. Decision Making Criteria for Cloud Computing Deployment
   Petra Maresova
4. Idea of Personal Digital Memories using Smart Application
   Martin Zmitko, Ondrej Krejcar
5. Principles of Usability in Human-Computer Interaction
   Tomas Hustak, Ondrej Krejcar
6. A Design of Dual Encryption Based On Data Obfuscation and Mutual Authentication in the Smart-Grid Environment
   Wonkyu Choi, Jungoh Park, Jaesik Lee, MoonSeog Jun
7. A Study on Realtime Detecting Smishing on Cloud Computing Environment
   Ayoung Lee, Kyounghun Kim, Heeman Lee, Moonseog Jun
8. An Approach to Discovering Weighted Service Pattern
   Jeong Hee Hwang, MiSug Gu
9. Design challenges and Implementation of A Shipborne Gateway for Safe and Secure Navigational Networks
   Kwangil Lee, MoonSub Song

17:00-18:30 Session B-3 : RNN
(HALL B)
(Chair: TBA)
1. Periocular Recognition Based on LBP Method and Matching by Bit-shifting
   So Ra Cho, Gi Pyo Nam, Kwang Yong Shin, Dat Tien Nguyen, Kang Ryoung Park
2. Color and depth image correspondence for Kinect v2
   Changhee Kim, Seokmin Yun, Seung-Won Jung, Chee Sun Won
3. Reduced Reference Quality Metric for Depth Images
   Thanh-Ha Le, Seongjo Lee, Seung-Won Jung, Chee Sun Won
4. Sustainable Operation Algorithm for High Availability with Integrated Desktop Storage based on Virtualization
   Hyun-Woo Kim, HwiRim Byun, Young-Sik Jeon
5. Robot reinforcement learning for automatically avoiding a dynamic obstacle in a virtual environment
   Phuong Chu, Hoang Vu, Donghyeon Yeo, Byeonggwon Lee, Kyhyun Um, Kyungeun Cho
6. Smart Virtual Lab using Hand Gestures
   Warda Ikram, Yoonji Jeong, Byeonggwon Lee, Kyhyun Um, Kyungeun Cho
   Yan Li, Byeong-Seok Shin
8. **Analysis on Temporal Sparsity of Human Face for Various Emotion Stimuli**  
   Unsoo Jang, Byoung Cheul Kim, Yoonkyoung Kim, Minwoo Park, Eui Chul Lee

9. **Monocular eye tracking system using webcam and zoom lens**  
   Kun Ha Suh, Yun-Jung Kim, Yoonkyoung Kim, Daejune Ko, Eui Chul Lee

**17:00-18:30 Session C-3 : MUE (HALL C) (Chair: TBA)**

1. **Data Hiding for H.264/AVC Based on the Motion Vector of 16 Grids**  
   Cheng-Hsing Yang, Yih-Kai Lin, Chun-Hao Chang, Jin-Yi Chen

2. **Idle-Time Processing in Time-Slide Window Join**  
   Hyeon Gyu Kim

3. **A Large-scale Object-based Active Storage Platform for Data Analytics in the Internet of Things**  
   Quanqing Xu, Khin Mi Mi Aung, Yongqing Zhu, Khai Leong Yong

4. **Concurrent Regeneration Code with Local Reconstruction in Distributed Storage Systems**  
   Quanqing Xu, Weiya Xi, Khai Leong Yong, Chao Jin

5. **A Technique for Streaming Multiple Video Parts in Parallel Based on Dash.js**  
   Konthorn Sangkul, Sucha Smanchat, Jo Yew Tham

6. **Prioritized Medical Image Forwarding over DTN in a Volcano Disaster**  
   Muhammad Ashar, Morihiko Tamai, Yutaka Arakawa, Keiichi Yasumoto

7. **A Framework of Personal Data Analytics for Well-Being Oriented Life Support**  
   Seiji Kasuya, Xiaokang Zhou, Shoji Nishimura, Qun Jin

8. **Method research for safe authentication in cloud environment**  
   Jaeseung Lee, Jae-pyo Park, Eunhwan Kim, Moon-seog Jun

9. **Graph-based Motor Primitive Generation Method of UAVs based on Demonstration-based Learning**  
   Yunsick Sung, Jeonghoon Kwak, Jonghyuk Park

**19:00-21:00 Banquet**
Day 2, May 19, 2015 (Tuesday)

09:00-09:20    Registration

09:20-12:20    Session A-1 : FT

1. Proxy based Mobility Management Scheme using Prediction Algorithm
   Daewon Lee, Daeyong Jung, Doo-Soon Park, HwaMin Lee

2. hFractal: A Cloud-assisted Simulator of Virtual Plants for Digital Agriculture
   Fei Hao, Doo-Soon Park, Young-Sik Jeong, Jong Hyuk Park

3. Task Result Verification using Resource Clustering in Desktop Grids
   Joon-Min Gil

4. Application of Data Mining for Crime Analysis
   Aziz Nasridinov, Gangman Yi

5. Path Planning for Avoiding Obstacles for Unmanned Ground Vehicles
   Gyouneun Kim, Deok Gyu Lee, Byeongwoo Kim

6. Improved AEB Performance at Intersections with Diverse Road Surface Conditions
   Based on V2V Communication
   Sangduck Jeon, Deok Gyu Lee, Byeongwoo Kim

7. Secure Initial Attach based on Challenge-Response Method in LTE Conforming to LTE Standards
   Jungho Kang

8. HBR-ACS Human Behavior Recognition-based Access Control System
   Hyungjin Im, Jeong Kyu Lee, Jong Hyuk Park

12:20-12:30    Organizing Committee Meeting
CONFERENCE VENUE

Lotte Hotel Hanoi

ADDRESS: No. 54, Lieu Giai St. Cong Vi Ward. Ba Dinh, Hanoi, Vietnam, Lotte Hotel Hanoi
TEL: +84-4-3333-1000
Hotel Website: http://www.lottehotel.com/hanoi/en/

By car
Noi Bai International Airport - Approximately 27 km to Hotel, about 40 minutes by Taxi or Limo
Hanoi National Convention Center - Approximately 5 km to Hotel, about 15 minutes by Taxi or Limo