DUC HOANG BUI

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SUMMARY

- Duc has been working on networking and energy issues of mobile systems including: wireless network bandwidth aggregation, energy efficiency (from the OS kernel to application level), performance analysis and optimizations, and transparent cross-device resource sharing.

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST), South Korea **2011 - present**

- PhD candidate in Computer Science · Energy-efficient mobile web browsing

Hanoi University of Science and Technology, Vietnam **2005 - 2010**

- BSc in Computer Science · GPA ranked in top 1% in the department

WORK EXPERIENCE

Samsung Electronics *Research Intern: transparent cross-device resource sharing* **Summer - Fall 2015**

- Improved 6X camera preview frame rate and reduced 4X photo capture time across two smartphones, compared to the state of the art (Rio, MobiSys 2014), by using more efficient real-time streaming protocols.
- Implemented Unified Resource Management Framework with 11,000+ lines of C/C++ code which manage resources (camera, sensors, apps) across multiple heterogeneous-platform mobile devices. [C, C++, CMake]

Microsoft Research *Research Intern: Energy-efficient mobile web browsing* **Spring - Summer 2014**

- Reduced 24.4% energy consumption of Google Chromium web browser with no perceivable impact on page load time. (The percentage is over the whole system, including LCD screen)
- Implemented the profiling, testing and data analysis tools for Chromium and Firefox web browsers on Android. [C++, Python, Bash, Javascript, C# .NET]

RESEARCH EXPERIENCE

- **Energy-efficient Multi-link Real-time Streaming** (2013). Stream high bitrate videos by simultaneously using multiple wireless network interfaces (WiFi and LTE) on smartphones. [C, Java]
- **Software Fault Localization** (2012). Automatically identify buggy lines in a program source code by correlating the executed lines and failed test cases. [C]
- **Automated Testing on Real-world Binary Programs** (2011). Automated test case generation for binary executables of Acrobat Reader and Microsoft Notepad on Microsoft Windows. [OCaml, C]

SELECTED PUBLICATIONS

Rethinking Energy-Performance Trade-Off in Mobile Web Page Loading

Duc Hoang Bui, Yunxin Liu, Hyosu Kim, Insik Shin, and Feng Zhao

ACM Int. Conf. on Mobile Computing and Networking (MobiCom), *2015* (18% (38/213) acceptance rate)

- The first full paper from a university in Korea accepted to MobiCom conferences.
- Open source code on github: energy_efficient_web_page_loading and browser_profiler

GreenBag: Energy-efficient Bandwidth Aggregation for Real-time Streaming in Heterogeneous Mobile Wireless Networks

Duc Hoang Bui, Kilho Lee, Sangeun Oh, Hyojeong Shin, Insik Shin, Honguk Woo, and Daehyun Ban

IEEE Real-Time Systems Symposium (RTSS), 2013 (22% (36/160) acceptance rate)

- Techniques applied in Download Booster on Samsung Galaxy S5. Outstanding Master's Thesis at KAIST.

HONORS AND AWARDS

- **Naver PhD Fellowship** 2016, by Naver Corporation for excellent PhD students in computer science.
- **Microsoft Research Asia Fellowship** 2015: Nomination Award, ranked 14th out of 90 students from top universities in Asia.
- **Microsoft Research Asia Excellent Award** 2015, in the Stars of Tomorrow Internship Program.
- **Qualcomm Innovation Award** 2015: Finalist, ranked in top ten, out of 37 final-round projects.

PROFESSIONAL SERVICES

- **External reviewer** for conferences/journals: ACM ICSE, IEEE RTSS, ACM EMSOFT, IEEE RTCSA, Springer ESE