

Byungkwon Choi

CONTACT	Ph.D Candidate School of Electrical Engineering, KAIST Phone: (+82)10-2590-0987 Email: cbkbrad@kaist.ac.kr URL: http://ina.kaist.ac.kr/~brad	Kim Byung Ho IT Building (N1) #817 KAIST, 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea
RESEARCH INTERESTS	High performance networked systems, cloud computing, and mobile application acceleration	
EDUCATION	Korea Advanced Institute of Science and Technology (KAIST) Ph.D., in School of Electrical Engineering (Advisor: Prof. Dongsu Han)	MAR. 2016 ~ Present
	Korea Advanced Institute of Science and Technology (KAIST) M.S., in School of Electrical Engineering (Advisor: Prof. Dongsu Han)	MAR. 2014 ~ FEB. 2016
	Inha University B.S., in School of Information and Communication Engineering (Ranked first out of 179)	FEB. 2007 ~ FEB. 2014

PUBLICATIONS **Conference**

1. **Byungkwon Choi**, Jeongmin Kim, Daeyang Cho, Seongmin Kim, Dongsu Han. “APPx: An Automated App Acceleration Framework for Low Latency Mobile App”. *In Proceedings of the 14th International Conference on emerging Networking EXperiments and Technologies (CoNEXT), Heraklion/Crete, Greece, December 2018. (Acceptance rate: 17.3%)*
2. Jeongmin Kim, Hyunwoo Choi, Hun Namkung, Woohyun Choi, **Byungkwon Choi**, Hyunwook Hong, Yongdae Kim, Jonghyup Lee, Dongsu Han. “Enabling Automatic Protocol Behavior Analysis for Android Applications”. *In Proceedings of the 12th International Conference on emerging Networking EXperiments and Technologies (CoNEXT), Irvine, California, December 2016. (Acceptance rate: 18.4%)*
3. **Byungkwon Choi**, JongWook Chae, Muhammad Jamshed, KyoungSoo Park, and Dongsu Han. “DFC: Accelerating String Pattern Matching for Network Applications”. *In Proceedings of the 13th USENIX Symposium on Networked Systems Design and Implementation (NSDI'16), Santa Clara, CA, March 2016. (Acceptance rate: 19.7%)*
4. Jaehyun Nam, Muhammad Jamshed, **Byungkwon Choi**, Dongsu Han, and KyoungSoo Park. “Haetae: Scaling the Performance of Network Intrusion Detection with Many-core Processors”. *In Proceedings of the 18th International Symposium on Research in Attacks, Intrusions and Defenses (RAID'15), Kyoto, Japan, November 2015. (Acceptance rate: 23.5%)*

Poster

1. **Byungkwon Choi**, Jeongmin Kim, Dongsu Han. “Application-specific Acceleration Framework for Mobile Applications”. *In Proceedings of the 2016 ACM Conference on Special Interest Group on Data Communication (SIGCOMM) - Poster, Florianopolis, Brazil, Aug 2016.*
2. Jaehyun Nam, Muhammad Jamshed, **Byungkwon Choi**, Dongsu Han, and KyoungSoo Park. “Scaling the Performance of Network Intrusion Detection with Many-core Processors”. *In Proceedings of IEEE/ACM Symposium on Architecture for Networking and Communications (ANCS) - Poster, Oakland, CA, May 2015.*

RESEARCH PROJECTS	<p><i>Distributed Tracing Systems for Microservices</i> JAN. 2019 ~ (present)</p> <p><i>Mobile App Acceleration</i> MAR. 2016 ~ DEC. 2018 Developed a framework that automatically generates app-specific acceleration proxy</p> <p><i>Automatic Protocol Behavior Analysis for Android Applications</i> MAR. 2016 ~ DEC. 2018 Developed a system that extracts network protocol behaviors for Android apps</p> <p><i>High Performance Pattern Matching for NFV Applications</i> APR. 2014 ~ MAR. 2016 Developed a filter-based string pattern matching for DPI middleboxes</p> <p><i>Manycore-based IDS/IPS</i> OCT. 2013 ~ APR. 2014 Developed a high performance IDS/IPS using Tiler many-core processors</p>
HONORS AND AWARDS	<p><i>Global PhD Fellowship (\$20,000 funding per year for 3 years)</i> Rep. of Korea, 2017 <ul style="list-style-type: none"> • Supported by National Research Foundation of Korea </p> <p><i>Nomination award for 2016 MSRA(Microsoft Research Asia) Fellowship</i> Beijing, China, 2016</p> <p><i>Silver prize for 22nd Samsung HumanTech Paper Award</i> Rep. of Korea, 2016</p> <p><i>Travel Grant for the 13th USENIX NSDI</i> Santa Clara, CA, 2016</p> <p><i>Qualcomm IT Tour (One of 30 selected students in South Korea)</i> San Diego, CA, 2013</p>
SOFTWARE PUBLISHED	<p><i>DFC: High-speed string pattern matching library</i> (https://github.com/nfsp3k/DFC)</p>
REVIEWER EXPERIENCE	<p><i>ACM Special Interest Group on Data Communication (SIGCOMM) 2017 Posters and Demos</i></p> <p><i>IEEE Transactions on Computers TC-2019-09-0469</i></p>
TEACHING EXPERIENCE	<p>Operating Systems and System Programming for Electrical Engineering (EE415) SPRING 2016 KAIST</p> <ul style="list-style-type: none"> • Instructor: Prof. Dongsu Han • Course Description: The course provides students with the knowledge and skills necessary to build the foundation in system programming for Electrical Engineering. • Role: Teaching assistant. Explaining course works to students, grading exams, quizzes, and course works, and answering questions from students.
COURSES	<p><i>Advanced Computer Networking and Cloud Computing (EE817)</i> AUTUMN 2016</p> <p><i>Embedded Software (EE516)</i> AUTUMN 2015</p> <p><i>Computer Architecture (CS510)</i> SPRING 2015</p> <p><i>Operating Systems and System Programming for Electrical Engineering (EE415)</i> SPRING 2015</p> <p><i>Software-defined Networked Computing (EE807)</i> AUTUMN 2014</p> <p><i>Theory of Hacking (EE515)</i> AUTUMN 2014</p> <p><i>Network Security (IS539)</i> SPRING 2014</p>
PROFICIENT SKILLS	<p>Programming Languages: C, C#, Java, Python, UNIX shell scripting, Latex</p> <p>Languages: Korean (native), English</p>