CHUNGHA SUNG

chunghasung.org

EDUCATION

University of Southern California (USC) *Aug.2017 - Present*
Ph.D. Candidate, Computer Science
Reliable and Secure Software Lab under Dr.Chao Wang

Virginia Polytechnic Institute and State University (Virginia Tech) *Aug.2014 - Dec.2016*
Master of Science, Electrical and Compute Engineering
Reliable and Secure Software Lab under Dr.Chao Wang

Sung Kyun Kwan University (SKKU) *Mar.2007 - Aug.2013*
Bachelor of Science in Engineering, Semiconductor Systems Engineering
Parallel Architecture and Programing Language Lab (PAPL) under Dr.Jae W. Lee

Gangwon Science High School *Mar.2005 - Mar.2007*
Grade skipping and early graduation (1 year)

EXPERIENCE

Microsoft Research, Redmond *May.2019 - Aug.2019*
Research Intern
· Mentor: Dr.Shuvendu Lahiri, Dr.Mark Marron
· Just joined

MediaTek Inc., MA, USA *May.2018 - Aug.2018*
Internship in Compiler Interface team
· Mentor: Dr.Henry Cox
· Developed an instruction constraints verifier with a SMT solver (Python, Z3-SMT solver)
· Utilized a fuzz testing system to provide a better testing process environment (C++, LLVM)

Microsoft Research, India *May.2017 - Aug.2017*
Research Intern
· Mentor: Dr. Akash Lal, Dr. Kaushik Rajan
· Extended a Scope query optimization tool to support uninterpreted functions and various combinations of columns (F#, C#, Scope query)

Google Summer of Code *May.2013 - Sep.2013*
Participant
· Mentor: Dr.Jae W. Lee, Dr.Junghoon Lee
· Contributed to publishing a graphical open-source package named RIGHT in R project

Ahn Lab Inc., Korea *Jul.2012 - Aug.2012*
Software Development Intern
· Changed boot loader sequence of server for making server maintenance easier

TEACHING

Data Structures and Object Oriented Design *Spring.2019*
Teaching Assistant *USC*
· Sophomore course (Instructor: Dr.Sandra Batista, Course number: CSCI 104)
· Led nine lab sessions, held office hours for eight projects, and graded two midterms and one final

Microcontroller Programming and Interfacing
Teaching Assistant

Fall.2014
Virginia Tech

· Sophomore course (Instructor: Dr.Jason S. Thweatt, Course number: ECE 2534)
· Managed lab sessions and graded course assignments of microcontroller behavior

Digital Systems
Teaching Assistant & Course Producer

Spring.2013
SKKU

· Junior course (Instructor: Dr.Jae W. Lee)
· Made three ARM-core based sorting optimization projects with Verilog HDL and graded course assignments

Digital Logic Design Laboratory
Teaching Assistant & Course Producer

Spring.2012
SKKU

· Sophomore course (Instructor: Dr.Jae W. Lee)
· Made several course projects running on FPGA with VHDL and managed lab sessions

PUBLICATIONS

[ASE 2019] Debreach: Mitigating Compression Side Channels via Static Analysis and Transformation
Brandon Paulsen, **Chungha Sung**, Peter Peterson, Chao Wang
The 34th IEEE/ACM Inter International Conference on Automated Software Engineering (ASE), San Diego, California, USA, Nov 2019

[FSE 2019] Mitigating Power Side Channels during Compilation
Jingbo Wang, **Chungha Sung**, Chao Wang
The 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Aug 2019

[ASE 2018] Datalog-based Scalable Semantic Diffing of Concurrent Programs
Chungha Sung, Shuvendu Lahiri, Constantin Enea, Chao Wang
Proceedings of the 33rd ACM/IEEE International Conference on Automated Software Engineering, pages 656-666.

[ASE 2018] CANAL: A Cache Timing Analysis Framework via LLVM Transformation
Chungha Sung, Brandon Paulsen, Chao Wang
Proceedings of the 33rd ACM/IEEE International Conference on Automated Software Engineering, pages 904-907.

[ASE 2017] Modular Verification of Interrupt-driven Software
Chungha Sung, Markus Kusano, Chao Wang
Proceedings of the 32nd IEEE/ACM International Conference on Automated Software Engineering, pages 206-216.

[FSE 2016] Static DOM Event Dependency Analysis for Testing Web Applications
Chungha Sung, Markus Kusano, Nishant Sinha, Chao Wang
Proceedings of the 2016 24th ACM SIGSOFT International Symposium on Foundations of Software Engineering, pages 447-459.

[UseR 2014, abstract] RIGHT: an HTML canvas and JavaScript-based interactive data visualization package for linked graphics
ChungHa Sung, TaeJoon Song, Jae W. Lee, and Junghoon Lee
The R User Conference (UseR), UCLA, Los Angeles, California, July 2014

SERVICES

External Reviewer

FSE 2019, ICSE 2019, SAS 2018, TSE 2018, ICSE 2017, FORM 2017, FMCAD 2017, RV 2017, ISSTA 2017, ICSE 2016, SETTA 2016, TurstSoft 2016, FMCAD 2016, ATVA 2016, ICECCS 2016, TASE 2016

AWARDS

ACM SIGSOFT Travel Grant for FSE	*Nov.2016*
Travel Award for CAV	*July.2016*
First Prize for Graduation Thesis and Project Award in SKKU	*June.2013*
Full Merit-based Awards from SKKU for Full Academic Years	*Mar.2007 - Aug.2013*
Deans List award in SKKU	*Apr.2012*
Scholarship from Samsung Electronics	*Mar.2007 - Feb.2009*

SKILLS

Languages: C, C++, C#, F#, JAVA, JavaScript, HTML, R, Matlab, Datalog, Python, Assembly x86/x64, Verilog, VHDL

Tools: Z3-SMT solver, Visual Studio, nodejs, LLVM, Eclipse, Cadence circuit tool, Modelsim, Altera quartus

OTHER EXPERIENCES

Vice president of Korean Student Association (KSA) in Virginia Tech	*Jun.2015 - May.2016*
PR student ambassador of the department of Semiconductor Systems Engineering	*Mar.2007 - Aug.2013*
3rd prize in individual kendo (Japanese fencing) competition of the League in Seoul (2 times)	*Dec.2018, Dec.2011*
Administrative Duties during Military service: sergeant squad leader	*Jan.2009 - Nov.2010*
Voluntary service in the countryside (Choongnam yeongi-gun, Korea)	*Aug.2008*