Youngsuk Kim

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https://github.com/JOE1994

EDUCATION

Georgia Tech, Atlanta, GA

- **M.S. in Computer Science** (GPA : 4.0) — Aug 2018 – May 2021

Korea University, Seoul, Korea

- **B.S. in Computer Science & Engineering** (GPA : 4.09 / 4.5) — Mar 2014 – Feb 2018

EXPERIENCE

Graduate Research Assistant (advisor: Dr. Vivek Sarkar) — May 2019 – now
Habanero Extreme Scale Software Research Lab — Georgia Tech

- Identify security vulnerabilities and performance issues of the Rust programming language
- Evaluate Rust performance on embedded workloads and platforms
- Extend Rust type checker to perform inter-thread lifetime analysis

DARPA SDH Program Software Tester — July 2019
Parenthetic — Remote

- Implemented CNN & autoencoder models using Pytorch and new software tools
- Evaluated the new software tools in terms of usability, correctness, relevance

Graduate Teaching Assistant (Instructor: Dr. Vivek Sarkar) — Jan 2019 – May 2019
On-campus TA for CS 4240 (Compilers & Interpreters) — Georgia Tech

- Implemented compiler frontend for ‘Tiger’ programming language
- Designed and graded course assignments and projects. Created review materials for class worksheets

Undergraduate Intern (advisor: Dr. SangKeun Lee) — Sep 2015 – Oct 2016
Data Intelligence Lab — Korea University

- Implemented news article recommendation engine (using Java)
- Studied large-scale XML parsing and how to manage hierarchical dataset with MySQL

OPEN-SOURCE CONTRIBUTIONS

- MIRI : Rust MIR Interpreter
  - Implemented support for running Rust MIR Interpreter on Windows OS
- Tock OS : Real-time operating system written in Rust
  - Submitted kernel patches to reduce binary size / documentation improvements
- More contributions available on GitHub (https://github.com/JOE1994)

COMPUTER SKILLS

Most Familiar Rust, Python (+ NumPy, Pandas, PyTorch, scikit-learn), Java, C, C++
Moderate JavaScript (+ D3), OpenMP, OCaml, Haskell, MATLAB, ANTLR, LaTeX

COURSE PROJECTS

Program Analysis (Rust, Fall 2019)

- Local flow-sensitive points-to analysis for detecting memory safety bugs in Rust programs

Artificial Intelligence (Python, Fall 2018)

- Game AI using alpha-beta pruning , A* Search for path finding, etc

Deep Learning (Python, Fall 2017)

- Cdiscount’s Image Classification Challenge (Global Kaggle competition) (Ranked 148 th / 626)

Compilers (OCaml, Spring 2017)

- Compiler frontend (lexer, parser, IR generator, interpreter, optimizer) for a subset language of C

System Programming (C, Fall 2016)

- File system profiler to compare disk I/O of ‘ext4’ vs ‘NILFS2’
- Packet-filtering kernel module using Netfilter & Proc file system

Information Retrieval (C++, Fall 2016)

- Pre-process news text data, and implement inverted index backend for news document search engine

AWARDS & SCHOLARSHIPS

- **Georgia Tech Presidential Fellowship**, *Georgia Institute of Technology* — 2019 – now
- **National Science and Engineering Scholarship**, *Korea Student Aid Foundation* — 2016 – 2017

COURSES

- **Graduate**
  - (Currently taking) High Performance Parallel Computing, Data Visualization & Analytics
  - Program Analysis, Systems & Networks, Intro to Info Security, Intro to Health Informatics
  - Machine Learning for Trading, A.I., Parallelizing Compilers, Algorithms
- **Undergraduate**
  - Compilers, Programming Languages, Theory of Computation, Formal Logic, Computer Architecture, Computer System Design, Operating Systems, Databases, System Programming, Information Security, Computer Network, Distributed Processing, Machine Learning, Data Science, A.I., Information Retrieval, Linear Algebra, Special lecture on Deep Learning
- **Coursera**
  - Parallel, Concurrent, and Distributed Programming in Java, a 3-course specialization by Rice University on Coursera. August 19, 2019
  - Build a Modern Computer from First Principles: Nand to Tetris Part II (project-centered course) by Hebrew University of Jerusalem on Coursera. July 20, 2018
  - Build a Modern Computer from First Principles: From Nand to Tetris (project-centered Course) by Hebrew University of Jerusalem on Coursera. February 7, 2018
  - Machine Learning by Stanford University on Coursera. May 4, 2017