Youngsuk Joseph Kim

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https://github.com/JOE1994

EDUCATION

Georgia Institute of Technology, Atlanta, GA

- **M.S./PhD in Computer Science** (GPA : 4.0) Aug 2018 – now

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 Institute of Technology

- Implement static checker to detect potential undefined behavior in multi-threaded Rust programs
- Extend Rust type checker to perform inter-thread lifetime analysis
- Evaluate Rust performance on embedded platforms

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 Institute of Technology

- 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 in Java using TF-IDF vectors of documents

OPEN-SOURCE CONTRIBUTIONS

- MIRI : Rust MIR Interpreter
- Tock OS : Real-time operating system written in Rust
- More contributions available on GitHub (https://github.com/JOE1994)

COMPUTER SKILLS

Most Familiar Rust, Python (+ SciPy, Pandas, PyTorch), Java, C, C++
Moderate JavaScript (+ D3), Spark, OpenMP, MATLAB, ANTLR, OCaml, Haskell

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**
  - Program Analysis, Systems & Networks, Intro to Info Security, Data Visualization & Analytics
  - Parallelizing Compilers, Machine Learning for Trading, A.I., Algorithms, Intro to Health Informatics

- **Undergraduate**
  - Compilers, Programming Languages, 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, Theory of Computation
- **Coursera**
  - Parallel, Concurrent, and Distributed Programming in Java (3-course specialization) by Rice University
  - Build a Modern Computer from First Principles: From Nand to Tetris (project-centered Course) by Hebrew University of Jerusalem
  - Machine Learning by Stanford University