Youngsuk Kim

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INTERESTS Memory safety & deadlock safety in Programming Languages, Rust language compiler

EDUCATION

Georgia Tech, USA
- **M.S./PhD in Computer Science** (advisor: Dr. Vivek Sarkar, GPA : 4.0/4.0) Aug 2018 – now

University of California, Irvine, USA
- **Access-UCI** (took course IN4MATX102 , A+) Apr 2018 – Jun 2018

Korea University, Seoul, Korea
- **B.S. in Computer Science and Engineering** (GPA : 4.09 / 4.5) Mar 2014 – Feb 2018

COMPUTER SKILLS

Most Familiar Rust, Python(+ NumPy, Pandas, PyTorch), Java, C, C++
Moderate Haskell, JavaScript, OCaml, MATLAB, LaTeX

AWARDS & SCHOLARSHIPS

- **Georgia Tech Presidential Fellowship**, *Georgia Institute of Technology* 2019 – now
- **National Science and Engineering Scholarship**, *Korea Student Aid Foundation* 2016 – 2017
- Semester High Honors, *Korea University* 2014, spring 2015, fall 2016, 2017

EXPERIENCE

Graduate Research Assistant (advisor: Dr. Vivek Sarkar) May 2019 – now
Habanero Extreme Scale Software Research Lab Georgia Tech, Atlanta, GA
- Identify security vulnerabilities and performance issues of the Rust programming language

DARPA SDH Program Software Tester July 2019
Parenthetic Remote
- Implemented CNN & autoencoder using new software and programming language.
- 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, Atlanta, GA
- Designed and graded course assignments and projects. Made review materials for class worksheets

Undergraduate Intern (advisor: Dr. SangKeun Lee) Sep 2015 – Oct 2016
Data Intelligence Lab Korea University, Korea
- Implemented article recommendation engine (using JAVA)
- Studied large-scale XML parsing and how to manage hierarchical dataset with MySQL

Coursera Beta Tester Group Jul 2017 – Present
member Remote
- Reviewed new course materials to report errors and make suggestions (> 12 courses)

INTEREST RELATED TERM PROJECTS

Compilers (Using OCaml, Spring 2017)
- Implemented a compiler that translates regular expressions to deterministic finite automata (DFAs)
- Implemented a parser for a given programming language (subset language of C)
- Implemented an interpreter and a translator which translates given language to stack machine IR
- implemented an optimizer for a given language

Data Science (Using Python)
- Implemented a 4-stage pipeline(preprocessing, model selection, evaluation, enhancement) for regression and classification using NumPy, Pandas, Matplotlib, scikit-learn
- Implemented algorithms to predict scores given to a restaurant by a given user using Yelp dataset

Information Retrieval (Using C++)
- Preprocessed news text data(parsing, stemming, removing stopwords)
- Implemented algorithms to generate inverted-index file from preprocessed text
- Implemented a news document search engine using Vector Space Model, BM25(Best Model 25)

Computer System Design (Using Intel x86 Assembly Language)
- Implemented a text-editor

COURSES

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