

Eugene (Junghyun) Kim

SOFTWARE ENGINEER

Bellevue, WA

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About Me

- A Software Engineer at Google who is passionate about technology and its impact to the real world.
- Experienced in problem-solving and Object-Oriented Programming.
- Learn and apply new technologies quickly; Work well in a team or on an individual basis.
- **Language & OS: C/C++, JAVA, PYTHON, PHP, DART, HTML, JAVASCRIPT, SQL, WINDOWS, MACOS, LINUX**
- **Skills:** Parallel Computing (MULTI-THREADING, OPENMP), Distributing Computing (MAPREDUCE), Machine Learning (TENSORFLOW, SCIKIT-LEARN), Data Science (PANDAS, NUMPY)

Education

Georgia Institute of Technology

Atlanta, GA

M.S. IN COMPUTER SCIENCE · MACHINE LEARNING

Jan.8th.2018-Dec.15th.2018

Relevant Coursework: CS 6220 (High Performance Computing), CS 7545 (Machine Learning Theory), CS 7643 (Deep Learning), CS 7646 (Machine Learning For Trading), CS 8803 (Special Topics: Foundations of Fairness of Machine Learning)

Georgia Institute of Technology

Atlanta, GA

B.S. IN COMPUTER SCIENCE · THEORY, INTELLIGENCE

Aug.17th.2015-Dec.16th.2017

Relevant Coursework: CS 4641 (Machine Learning), CS 4731 (Game AI), CS 4510 (Automata and Complexity), CS 4540 (Advanced Algorithm), CS 3510 (Design and Analysis Algorithms), CS 3600 (Artificial Intelligence), MATH 4261 (Math Statistics I), MATH 3215 (Probability & Statistics), MATH 4640 (Numerical Analysis I)

Experience

Google · Google Ads (DoubleClick Search - Budget Management Team)

Kirkland, WA

SOFTWARE ENGINEER · JAVA · SQL · PROTO · BAZEL · DART

Jan. 28th. 2019 - Current

- Migrated and Deployed PerformanceTarget API, which allows customers to monitor and forecast the overall performance of a group of advertisement campaigns, to new Google Ads API Framework in Java; improved the average latency by 20% and increased code velocity by taking out performance target API codes from campaign management application and with modularization of the code; responsible for maintaining clean and bug-free service for PerformanceTarget API with code ownership.
- Improved the usability of campaign group that allows customers to track the overall performance of multiple advertisement campaigns with similar goals and increased opt-in rate for campaign group feature by xx% (Under experiment yet).
- Designed and Implemented Frontend for Campaign Group with MCC account (an account that manages multiple manager and serving accounts) support; also worked on a backend support for MCC Campaign Group. MCC Campaign Group allowed advertisement agencies to manage multiple campaigns with similar goals under different manager accounts easily, fast, and reliably, without relying to error-prone and slow manual excel work.

Google · Google Ads (De-duped Reach Team)

Venice, CA

SOFTWARE ENGINEERING INTERN · C++ · PYTHON · SQL · PROTO · BAZEL · PARALLEL/DISTRIBUTED COMPUTING

May. 14th. 2018 - Aug. 3rd. 2018

- Built pipeline for validating traffic estimation model for Adwords to estimate reach (the number of unique users who see a given advertisement) and frequency (the number of times a single user see a given advertisement) for a list of advertisements in certain period in large ads database at Google using Google's highly scalable parallel data pipeline library **FLUME**.
- Optimized the performance by merging weekly and monthly statistics and aggregating daily, weekly, and monthly statistics instead of all daily statistics based on that aggregation function is a bottleneck in the performance of the query.
- Improved performance of validation pipeline for traffic estimation for Adwords by roughly **20 times** with Google's F1 distributed database engine and statistical estimation algorithm called HyperLOGLOG++.

SAMSUNG Electronics · Security Lab

Seoul, S.Korea

RESEARCH INTERN · C++ · OPENMP

Jun. 12th. 2017 - Aug. 11th. 2017

- Conducted research on privacy preserving fingerprint authentication based on minutiae points with function-hiding Inner Product Encryption (IPE) to protect sensitive biometric data even when either the server or device is hacked.
- Implemented **C++** based prototype of privacy preserving fingerprint authentication protocol and tested over a large dataset and greatly improved performance by deploying CPU-based parallelism with **OPENMP**
- Paper: <https://goo.gl/JrTHuo>

Georgia Institute of Technology · HPC Garage Lab

Atlanta, GA

RESEARCH ASSISTANT · C++ · OPENMP

Aug. 21st. 2017 - Dec. 15th. 2018

- Conducted research on accelerating Tensor Factorization algorithm (which is commonly used in Machine Learning) using CPU and GPU based parallelism under Dr. Vuduc.
- Tuned parameter (block size) by finding the relationship between fill (the measure of how zero-elements are included using that block size) and operation time.
- Helped Generalizing matrix case ($n = 2$) code for PHIL Fill Estimation Algorithm (<https://goo.gl/SjkKop>) to tensor case ($n > 3$) and wrote a code for $n = 3$.

Georgia Institute of Technology · Stadium - IoT Lab

Atlanta, GA

RESEARCH ASSISTANT · PYTHON · PHP · DJANGO

Aug. 22nd. 2016 - Dec. 15th. 2017

- Coordinated frequencies to avoid frequency collision during the football game at Bobby Dodd Stadium
- Collected frequency data (magnitude of the frequency ranging from 400 MHz to 1GHz) during the football game as csv (comma separated values) files.
- Merged several csv files that contain frequency data into one csv file using **PYTHON**.
- Created an online system that can manage csv files collected during the football game and visualize them using **PHP**.
- Analyzed and Visualized the data with **DJANGO** and **PHP** obtained from sensors in Bobby Dodd Stadium at Georgia Tech.

Georgia Institute of Technology

Atlanta, GA

GRADUATE TEACHING ASSISTANT

Jan. 8th. 2018 - Dec. 14th. 2018

- CS 3510 (Design & Analysis Algorithm)
- Held weekly office hours to help students with understanding materials taught in the class.
- Graded homework and exams.
- Proctored exams.

Georgia Institute of Technology

Atlanta, GA

UNDERGRADUATE TEACHING ASSISTANT (OR GRADER)

Jan. 11th. 2016 - Dec. 15th. 2017

- CS 2051 (Honors Discrete Math), MATH 3012 (Applied Combinatorics), and CS 4510 (Automata and Complexity)
- Held weekly office hours to help students with understanding materials taught in the class.
- Graded homework and exams.
- Proctored exams.

Projects

Honeycomb Critique

PROJECT MANAGER · NODE.JS · HTML · JAVASCRIPT · MYSQL

Jun. 2016 - Jul. 2016

- Created a web application that visualizes statistics of all classes' and instructor's grade distributions at Georgia Tech.
- Fetched course grade information from Georgia Tech IRP (Institutional Research and Planning).
- Added "filter by certain criteria" to give better understanding of grading distribution such as course number, semester, professor, the size of the class, and so forth.

Honeycomb Critique

BUZZMOVIE · HTML · JAVA · PHP · JAVASCRIPT · MYSQL

Jun. 2016 - Jul. 2016

- Created a movie recommendation system for Georgia Tech students.
- Fetched movie information from Open Movie Database and used that information to offer a service in which users can get a recommendation from other users or recommend a film to others.

IT Factory COIN

SOFTWARE ENGINEER AND PROJECT MANAGER · C++ · PHP · JAVASCRIPT · MYSQL

Mar. 2014 - Dec. 2015

- Created and managed online judge (programming assignment system similar to Hackerrank) for Korea Digital Media High School (KDMH).
- Created assignment management system for programming assignments.
- Created a badge system based on achievements to encourage student's active learning.
- IT Factory COIN has been used for assignments (C Programming) for the entire pre-freshmen since 2015(every year). Now it's used as an official online judge for C programming course at KDMH.

Withstudy

SOFTWARE ENGINEER · PHP · JAVASCRIPT · JAVA · MYSQL

Mar. 2013 - Nov. 2013

- Created a scheduling mobile application for high school students where they can manage study plans and extracurricular activities using **PHP** and **JAVA**.

Honors & Awards

2017	Dean's List , Georgia Institute of Technology (Fall 2017)	<i>Atlanta, GA</i>
2017	Dean's List , Georgia Institute of Technology (Spring 2017)	<i>Atlanta, GA</i>
2016	Dean's List , Georgia Institute of Technology (Fall 2016)	<i>Atlanta, GA</i>
2016	Faculty Honors , Georgia Institute of Technology (Spring 2016)	<i>Atlanta, GA</i>
2015	Dean's List , Georgia Institute of Technology (Fall 2015)	<i>Atlanta, GA</i>
2013	Honorable Mention , SK Teen App Challenge	<i>Seoul, S. Korea</i>
2011	Silver Medal , Korean Olympiad in Informatics	<i>Seoul, S. Korea</i>
2011	Gold Medal , 5th National Programming Contest	<i>Suwon, S. Korea</i>
2011	Gold Award , Korean Olympiad in Informatics (Seoul Regional)	<i>Seoul, S. Korea</i>