Steven Song

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EDUCATION

Tufts University, Medford, MA
Bachelor of Science in Computer Science and Bachelor of Science in Biochemistry, anticipated December 2019
GPA: 3.88/4.0, Dean's List
Relevant Courses: Concurrency, Computation Theory, Programming Languages, Machine Structure and Assembly Language, Algorithms, Data Structures, Discrete Mathematics, Intro to Computer Science

Millburn High School, Millburn, NJ
Graduated with Honors, June 2016
Received maximum of 5 on Advanced Placement Computer Science Exam
Received maximum of 5 on all eight other AP exams taken

WORK EXPERIENCE

Ab Initio Software, Lexington, MA
Software Engineering Intern, Summer 2018

- Worked on creating a file index for 'graph' files - their version of a code file. Two separate indices were created, both using SQLite as a lightweight database. The first was written in python and traversed folder structures to index simple information like file creation time, software revision, number of components in a graph, etc. The second index was more robust, written in C++, it indexed information such as function call sites (which functions call other functions) and data lineage (the data that I load and use, who created it, who else uses it). The challenge was to normalize all the information in a way that was easily and efficiently query-able.
- While stress testing by indexing hundreds of thousands of code files, we decided to improve efficiency by parallelizing the index in a master/worker architecture. Unfortunately, the code I was using was not thread safe so I had to work without the benefit of in memory database commits. This meant any cross-referenced data had to be handled appropriately over all the processes and I had to deal with file lock contention. Overall, the parallelism did improve performance linearly i.e. running the index four ways parallel cut the time to a quarter.
- A more limited index already existed so my final task was to deprecate the old index and build its features into the new more capable index.

Tufts University Computer Science Department, Medford, MA
Teaching Assistant, January 2017 to Present (4 semesters)

- Led labs sessions and recitations, held office hours, and graded homework, lab assignments, and exams.
- Courses TA'ed: Fall 2018 - Computation Theory, Spring 2018 - Data Structures, Spring and Fall 2017, Introduction to Computer Science

PROJECTS

Personal Website, `StevenSong.me`
JumboCode, on campus club dedicated to creating software for nonprofit services, worked on a team to develop an anonymous chat service for a student run mental health hotline, led backend development of communication server.
Cesspool Bikes, web app to manage a bike sharing service, created with Node.js, Express and MongoDB, deployed on AWS EC2.
Laundry Check, Amazon Alexa Skill that lets users check for open laundry machines in on campus laundry rooms, deployed on AWS Lambda.

INTERESTS

Emergency Medical Services (EMS), Emergency Medical Technician (EMT), certified in NJ, MA, and nationally, trained in basic life support care and respond to emergency medical calls, member of local volunteer squad in Millburn, NJ (Millburn Short Hills Volunteer First Aid Squad), started in August of 2014 as a junior in high school.
Fencing, fenced sabre competitively for Tufts University Club Fencing team and for Millburn High School varsity team.
Clarinet, played clarinet in Millburn High School Wind Ensemble and Concert Band.
Science Fiction, watched all the Star Trek series, all the Stargate series, the remake of Battlestar Galactica and its spinoffs, Firefly, all Star Wars movies and most shows, The Expanse, Dark Matter, Continuum, most of new and some old Doctor Who.

SKILLS

Programming Languages: C, C++, Python, JavaScript, Bash, HTML5, CSS, Java, Erlang, Scheme, Standard ML, Lua, VB
World Languages: English, Chinese, American Sign Language, French
Other Skills: Assembling furniture without instructions, Grocery bagging without crushing things