Kyung Hoi (Joseph) Min

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EDUCATION

CALTECH
BS in Biology and Computer Science
Present | Pasadena, CA
Expected Graduation: Jun 2020
Cum. GPA: 3.9 / 4.0

COURSEWORK

UNDERGRADUATE
Biology
Regulation of Gene Expression
Cell Biology
Genetics
Systems Genetics *(Planned)*
Bioinformatics *(Planned)*
Biomolecular Computation *(Planned)*

Computer Science
Programming Methods
Decidability and Tractability
Communication Networks
Algorithms *(2 courses, Planned)*
Learning systems *(Planned)*

SKILLS

PROGRAMMING
• Python
• Javascript
• HTML/CSS, PHP
• C, C++
• Matlab
• R
• Assembly

SOFTWARE
• Docker
• Matplotlib, Seaborn
• Numpy, Numba, Pandas
• ZeroMQ
• Adobe Photoshop, Lightroom, Illustrator, Indesign

DATA ANALYSIS
• RNA-seq *(QC, Kallisto, Sleuth)*
• Bootstrapping *(significance testing)*

MOLECULAR BIOLOGY
• PCR
• Cloning
• Purification
• Gel electrophoresis

PROJECTS

ALASKA | Full-Stack Developer
Jan 2017 - Present | Pasadena, CA
- Developed a framework for automated, complete RNA-seq analysis.
- Full-stack developer - Wrote entire back-end server in Python, R, Bash; and front-end portal in Javascript, HTML/CSS, PHP.
- Presented a poster at the 21st International *C. elegans* Conference.
- Alpha version available at http://alaska.caltech.edu/ and source code on Github.

NETWORK SIMULATOR | Networks Course Project
October 2018 – December 2018 | Pasadena, CA
- Event-based simulation of traffic in a network with arbitrary topology in Python.
- Implemented TCP congestion control (Reno, FAST) algorithms.
- Developed a UI with PyQt5 to easily set up, run, and visualize simulations.

EXPRESSION PLOTTER | Software Developer
Jun 2017 – Sep 2017 | Pasadena, CA
- Continuous and binomial data analysis and plot generator in Python.
- Implemented significance testing with bootstrapping.
- Automatically generates boxplots, heatmaps, scatterplots of data.
- Multithreaded; C-like performance with Numpy and Numba.

RESEARCH

STERNBERG LAB | Undergraduate Researcher
Jan 2017 – Present | Pasadena, CA
Worked with **David Angeles PhD.** and **Prof Paul W. Sternberg** on bioinformatics and molecular biology projects involving the model organism *C. elegans*, most notably Alaska (above).

EXTRACURRICULARS

YEARBOOK | Business Manager, Designer, Photographer
Sept 2016 – Present | Pasadena, CA
Worked on the yearbook, *The Big T*, as business manager, designer and photographer. Established a new advertisement system, shared cloud storage system, job organization and assignment system, and payment reimbursement system. Designed pages and took/edited photos with Adobe software.

HEALTH ADVOCATE | Emergency Medical Responder
Sept 2017 – Present | Pasadena, CA
American Red Cross certified emergency medical responder and basic life support provider. Worked as the dormitory health advocate and provided first aid to students.

STUDENT GOVERNMENT | Lloyd House Historian
Jun 2017 – Present | Pasadena, CA
Recorded Lloyd House (dormitory) events by taking photos. Established a new shared cloud storage system for the house to distribute these photos.

AWARDS

2018 Samuel P. and Frances Krown SURF Fellowship
2017 SURF Fellowship