Kei Imada

500 College Ave - Swarthmore PA 19081 – 206-380-3855 (cell) - kimada1@swarthmore.edu
GitHub: keikun555 – Website: keikun555.github.io - LinkedIn: kei-imada

WHO AM I?

Systems research assistant and **teaching assistant** for computer science / mathematics. Fluent in Python, C, OpenMPI, CUDA, and Japanese. Has multiple experiences in managing a project while also being a full stack developer for tools that help thousands of clients. A Junior with a cumulative 3.9 GPA in Swarthmore College studying computer science and mathematics.

EDUCATION

Swarthmore College **August 2016 – Present**

- *Bachelor of Arts with dual majors in Computer Science and Mathematics*: Cumulative 3.9 GPA
  Major 3.9 GPA
- **Relevant Coursework:** Networks, Parallel and Distributed Computing, Algorithms, Natural Language Processing, Programming Languages, Real Analysis, Modern Algebra, Several Variable Calculus, Basic Differential Equations, Honors Linear Algebra

Skills: Python, C, C++, MPI, CUDA, HTML/Javascript/CSS, Bash and Linux (CentOS), Git, OCaml, MySQL, Japanese, Chinese

EXPERIENCE

Swarthmore College Computer Science **Swarthmore, PA**
Network RAM Research Assistant June 2018 – Present

- Employed machine learning analysis methods on system statistics to predict when the system is about to swap to disk
- Headed the development of the user level policy infrastructure in C for the NSwap network RAM implementation
- Reduced the runtime of memory intensive benchmarks by 99% and their swap disk usage by 97%

Swarthmore College Computer Science **Swarthmore, PA**
Peer Mentor for "Data Structures and Algorithms" and "Introduction to Computer Systems" January 2017 – Present

- Assist computer science professors in lectures and help students learn concepts in data structures, algorithms, and systems
- Lead weekly support sessions to clarify class material and provide lab assistance to students
- Mentor students through structure, logic, and syntax errors while teaching debugging techniques
- Communicate with students, professors, and other peer mentors to explain difficult concepts in clear, concise ways

Swarthmore College Mathematics **Swarthmore, PA**
Mathematics Clinician September 2018 – Present

- Facilitate weekly support sessions to help over 100 students for all mathematics classes offered at the college
- Guide students through difficult concepts in modern algebra, multivariable calculus, linear algebra, and other courses

Swarthmore College Computer Society **Swarthmore, PA**
Staff September 2017 – Present

- Collaborate with other SCCS members to develop various web tools for the Swarthmore College community
- Administer SCCS-run servers and troubleshoot outages
- Manage SCCS-run Media Lounge and Game Pit
- Oversee workshops on topics in technology and computers

TECHNICAL PROJECTS

Swarthmore College **Swarthmore, PA**
SwatPrereqView December 2018

- Devised a website that visualized prerequisites for 1,850 Swarthmore courses with a total of 1,000 prerequisites
- Designed the frontend using Semantic UI and vis.js
- Built the backend with Flask and a parallel Beautiful Soup 4 scraper in Python 3

Swarthmore College **Swarthmore, PA**
Airpool Project Leader January 2018 – September 2018

- Headed the development team for a website that would help Swarthmore students schedule carpool rides to and from the airport
- Scheduled more than 150 rides with more than 1,000 views (Swarthmore Facebook page no longer a mess before break)
- Designed the frontend using DataTables, Fullcalendar, JQuery, and Semantic UI
- Implemented the backend with Flask and MySQL with LDAP authentication

Swarthmore College **Swarthmore, PA**
Three-Dimensional Fractal Rendering Software on GPU Clusters April 2018 – May 2018

- Developed a 3D fractal renderer on a GPU cluster using CUDA C/C++ and OpenMPI with Jonah Langlieb and Liam Packer
- Generated a 8192x8192 PNG image of a tenth iteration 3D fractal in 30 seconds using distributed ray marching techniques
- Tested benchmarks of the software on Swarthmore College's commodity computer cluster
- Co-authored a report about the project and its scalability

University of Washington **Seattle, WA**
Real-time Butterworth Type Infinite Impulse Response Filtering Python Package July 2017 – August 2017

- Engineered a real-time Butterworth type signal filtering package in Python that could filter more than 250 kHz in real-time
- Identified and eliminated bottlenecks to increase processing speed by more than 250 times
- Created a wave audio file frequency filtering package using the signal filtering package

Swarthmore College **Swarthmore, PA**
TriCo Course Scheduler Project Leader October 2016 – May 2017

- Spearheaded the project that would help over 4,000 students schedule their courses out of over 10,000 courses
- Built the backend for the project using Python, developed the frontend with Bootstrap, Fuze.js, and DHTMLX
- Helped 1,000 Swarthmore College, Bryn Mawr College, and Haverford College students schedule their courses