

Kei Imada

500 College Ave - Swarthmore PA 19081 – 206-380-3855 (cell) - kimada1 (at) 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 projects while also developing on the full stack for tools that helped 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 BeautifulSoup 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