Simon J. Bloch

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Software Engineer / Data Scientist

Education

SWARTHMORE COLLEGE, Swarthmore, PA
- Bachelor of Arts degree (B.A.), May 2017
- Major: Computer Science — Minor: Mathematics (focus in Statistics and Probability)+Theater
- GPA: 3.7
- Received the Helen Ridgway Cooley (Class of 1907) Endowed Scholarship

Employment History

GRO INTELLIGENCE - New York, NY — *June 2017 - Fall 2021*
· Software Engineer—Geospatial processing/modeling, search, misc backend
· Certain highlights included in "Gro" under Recent Projects

TUTOR ASSOCIATES - New York, NY — *Spring 2022 - Present*
· Professional Math & Computer Science Tutor
· Academic math/CS, calculus, geometry, test prep (ACT, SAT, SSAT, ISEE)

CITY BUREAU - New York, NY — *Spring 2022 - Present*
· Coder/engineer—City Scrapers initiative track public board meeting data
· Developed scrapers/other backend support [Python+JS]

CARNEGIE MELLON ROBOTICS INSTITUTE- Pittsburgh, PA — *June 2016 - Aug 2016*
· Summer Scholars Research Program—(See "Pittsburgh" in Recent Projects)

GOOGLE SOFTWARE ENGINEERING INTERNSHIP- Mountain View, CA — *May 2015 - Aug 2015*
· Software Engineering Intern—(See "Mountain View" in Recent Projects)

SWARTHMORE COLLEGE COMPUTER SOCIETY- Swarthmore, PA — *Nov 2014 - May 2017*
· Staff Member—Sysadmin for student-run servers, handled web hosting issues

Recent Projects

FREELANCE WEB DEVELOPER - New York, NY — *2022 - Present*
- JS, ReactJS, D3.js, NodeJS, Mapbox—Developed multiple responsive websites+data visualizations

GEO WORLD HISTORY DATA VISUALIZATION: "SPACETIME" — *2018 - Present*
- Mapbox/D3/Node/PostGIS—Dynamic map+timeline visualization for 4000 years of world history

PROBABILISTIC CROP MASKING (Gro) - New York, NY — *2019 - 2021*
- Python, JS, Google EarthEngine—Co-led a small team to develop, test, and productionize probabilistic geospatial crop mask rasters for use in multi-signal models and visualizations.

BACKEND ENGINEERING/DEVOPS (Gro) - New York, NY — *2017 - 2019*
- Various projects: Scheduling logic for async worker cluster, re-implementation of search, oversight of relational DB, facilitated migration of user data, code cleanup/reviews
- Regular on-call shifts, led on-call trainings and architecture trainings for new engineers

STEREO SENSOR PERCEPTUAL MODEL- Pittsburgh, PA — *Summer 2016*
- C++, Octomap/ROS—Developed a probabilistic perceptual model for a state-of-the-art sensor to construct a multi-feature map of its environment. Designed to map and model icy moons

PARALLELIZED MERGING OF 3D POINT CLOUDS- Swarthmore, PA — *Spring 2016*
- C, CUDA—Developed an efficient pipeline to merge multiple 3D Point Clouds on a GPU
- Fully tested+productionized, and developed a sequential version for performance tests

AUDIO-PROCESSING INFRASTRUCTURE- Mountain View, CA — *Summer 2015*
- C++, Matlab—Designed, implemented, and tested an audio-processing multi-source localization infrastructure, which toggles/controls a fixed nonlinear beamforming algorithm.

Skills

Languages: Skilled: Python, JS, C++, C   Familiar: Bash, Java, R, Lisp

Tools: React, D3, AWS, EarthEngine, SQL, Numpy, Linux+Emacs, CUDA, OpenCV, MATLAB, Mapbox

Relevant Coursework: Parallel and Distributed Computing, Probabilistic and Mobile Robotics, Graphics, Algorithms, Computer Vision, Audio Processing, Computer Networks, Linear Algebra, Statistics, Probability, Stochastic Modeling, Artificial Intelligence, Data Structures, Computer Systems, Multivariable Calculus, Real Analysis,