Thomas Ottaway
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Education

- **Brown University** — Providence, RI
  Applied Math-Computer Science GPA: 4.0 — *Expected Graduation May 2022*
  - **Technical Coursework:** Graduate Algorithms Seminar | Sublinear Algorithms for Big Data | Discrete Math | Probability and Statistics | Distributed Systems | Convex Optimization | Information Theory | Dynamical Systems | Operating Systems | Control Systems Engineering

Work Experience

- **Draper Laboratories (Python, C++)** — Cambridge, MA
  Engineering Intern — *June 2020 - August 2020*
  - Developed and implemented an algorithm to locate radiation sources using a mobile sensor. This included a particle filter to estimate the location and strength of the radiation source as well as information theoretic search heuristics for selecting new locations to take measurements.
  - Implemented improved simulations for gaseous plumes and adapted search algorithm to estimate the source of the gas.
- **NYS DOH/Health Research Institute (Python, SQL, JavaScript)** — Albany, NY
  Software Developer Intern — *Summer 2018 - Spring 2020*
  - Migrated an application critical to the COVID-19 response effort from an Oracle back end to SQL Server
  - Created systems to import patient identifying information as CSVs which drastically reduced data entry times
  - Developed and maintained Python scripts to pre-process laboratory instrument data
  - Interfaced with a legacy database containing 200+ tables
  - Developed scripts for automated regression testing
- **Undergraduate Teaching Assistant for Discrete Math** — *Jan. 2020 - May. 2020*
  - Graded student assignments and held weekly office hours to explain concepts and help students with problems sets
- **LingView (JavaScript, Node.js, React)** — Brown University
  Developer — *Sept. 2018 - May 2019*
  - Built a front-end interface for viewing and searching through a linguistic corpus

Projects

- **OS Kernel (C)** (*Jan. 2020 - May 2020*) - Built a simple kernel with a scheduler, TTY driver, S5FS file system, and virtual memory as part of a course on Operating Systems.
- **Ball Balancing (C++)** (*May 2020*) - Built a high fidelity simulation of a table with two axis of rotation balancing a ball. Features included a rigid body physics simulator, a simulated raytraced camera, CV algorithms to estimate the ball's location, a Kalman Filter to smooth sensor noise, and tuned PID controller.
- **Music Visualizer (Python)** (*May 2020*) - Built a music visualizer using Fourier transforms.
- **Neural Nets for Solving ODEs (Python)** (*Aug. 2019*) Implemented some algorithms from this paper.
- **Rocket Stabilization (Python)** (*Apr. 2019 - May 2019*) - Final group project for Nonlinear Dynamical Systems. We studied a thrust vector controlled rocket in two dimensions and discovered bifurcations which occurred as we varied the parameters of a PD controller.

Skills

- **Programming Languages** : Python, C++, C, JavaScript, Go, SQL, MATLAB
- **Frameworks/Tools**: Numpy, Matplotlib, ROS, PyQtGraph, Django, SQLServer, Oracle, PyTorch, Gazebo

Activities

- Juggling, running, rock climbing, cooking, blues dancing, unicycling, bicycling, playing piano