Aaron Orenstein

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 Github   Linkedin

EDUCATION

- **Case Western Reserve University** — Cleveland, OH
  Bachelor of Science in Computer Science; GPA: N/A — *Aug. 2020 - May 2024*
  - **Relevant Coursework**: CSDS 233 Introduction to Data Structures • CSDS 281 Logic Design and Computer Organization

- **Treasure Valley Math and Science Center** — Boise, ID
  STEM School; GPA: 4.00 — *Aug. 2013 - May. 2020*
  - **Relevant Coursework**: BSU MATH 187 Discrete and Foundational Mathematics 1 • BSU MATH 275 Multivariable and Vector Calculus • AP Computer Science (Independent Study) • AP Statistics (Independent Study)

EXPERIENCE

- **Boise State Unversity, Adapt Lab** — Boise, ID
  Research Assistant — *Oct 2018 - Aug 2020*
  - **LiDAR Data Analysis**: Worked on optimizing memory usage for processing large amounts of LiDAR data. Modelled both data and comparisons between data through heatmaps. Used Gaussian Fitting in order to optimize run time and computations.
  - **Code Parallelization**: Analyzed data from disruptions in the ionosphere caused by seismic events. Parallelized a portion of code used for data processing, identifying and removing global variables which prevented parallelization. Used OpenMP to run the code in parallel.
  - **Polyhedral Code Representation**: Used Clang's compiler to generate an Abstract Syntax Tree from a portion of code, which was then traversed to produce a polyhedral model of the code. This model was used to optimize the code and produce the new code. Worked to expand code parser functionality.

- **Shotokan Karate** — Boise, ID
  Assistant Instructor — *2014 - Present*
  - In the absence of the sensei, I teach one and a half hour classes, managing 2-5 students of varying abilities. I also prepare students for and conduct rank tests.

SKILLS

- **Experience With**: Python, C++, Java
- **Familiar With**: Docker, Git, Unit Testing (Google Test), OpenMP, Clang, SCRUM
- **Languages**: German

AWARDS AND HONORS

- Carl N. and Margaret Karcher Founders' Scholarship Recipient — 2020
- National Merit Finalist — 2020
- Completed level 5 of Google's Foobar challenge — 2020
- National AP Scholar - 5's on 12 tests taken — 2019 & 2020
- 2nd Degree Black Belt - Shotokan Karate — 2018
- Idaho State Solo Ensemble Festival - 3rd place snare solo and 1st place percussion quartet — 2019

PRESENTATIONS

- BSU Research Computing Days: Presented LiDAR Data Analysis — 2019
- Idaho Conference on Undergraduate Research: Presented LiDAR Data Analysis — 2019
- BSU Research Computing Days: Presented Code Parallelization Project — 2020

PUBLICATIONS

- R. Shankar, N. Ilangakoon, A. Orenstein, F. Ciaglia, N. F. Glenn, and C. Olschanowsky, "Adaptlidartools: A full-waveform lidar processing suite," in *2019 15th International Conference on eScience (eScience)*, pp. 369–377, 2019