Carter Mak

Undergraduate Student, Aerospace Engineering

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Education

University of Colorado, Boulder **Expected Graduation: 2022**

- 4.0 GPA
- Engineering Honors Program
- B.S. Aerospace Engineering
- Minors Economics, Computer Science

Experience

Flight Software Intern — *Advanced Solutions, Inc.* **Summer 2020**

- Edited and improved satellite flight software and ground data systems
- Built ancillary tools for mission planning and spacecraft GNC
- Employed and interpreted object-oriented code in C++, Python, and Typescript/Javascript
- Disciplined use of Git for collaboration and regimented code review with CI and testing
- Deployed sandbox environments in Docker with extensive use of Postgres and custom Python and Bash tooling

Lab Assistant — *University of Colorado Department of Aerospace Engineering* **Winter 2020-present**

- Lead laboratory assistant for ASEN 2001: Statics, Structures and Materials
- Assist in proctoring lab assignments
- Provide dedicated office hours to help students
- Support student projects and research in Aerospace electronics shop
- Referred by department faculty

Avionics Engineer — *CU Sounding Rocket Laboratory* **Fall 2019-present**

- Dedicated team member developing an in-house custom flight computer
- Applying object-oriented C++ to create a flexible and robust flight software package
- Rapid prototyping of hardware and software

Experimental Research Student — *Northwest Research Associates* **Winter 2018-Fall 2019**

- Designed and implemented a discrete Fourier-based method to calculate temporal image shift for quantitative turbulence analysis, among other MATLAB-based routines
- Accelerated procedures for field setup and data collection with portable meteorological towers and multi-camera image acquisition
- Executed field experiments in the Southwest U.S. and Hawaii, developing workflows to optically measure atmospheric turbulence

Awards and Accolades

- International Mathematical Contest in Modeling: 14,000+ worldwide teams — *Honorable Mention, 2019*
- ULA Future Heavy Payload Competition: awarded $5000 grant — *First Place, 2018*
- College Board AP — *National Scholar, 2018*
- National Merit Scholarship Contest — *Finalist, 2017*

Skills

Digital	MATLAB, C++, STK, Git, Javscript/Typescript, PostgreSQL, Node.js, Docker, LaTeX, Wolfram Mathematica, Microsoft Office Suite, Markdown, Bash/Linux Shell, Arduino, Autodesk Fusion 360, Computational Image Analysis
Soft Skills	Team Leadership, Public Speaking and Presentation, Communication
Hands-on	FDM (FFF) Additive Manufacturing, ESD-Safe Electronics Handling (certified), TH and SMD Soldering
Hobbies	Hiking/Backpacking, Skiing, Climbing, Running, Photography