Ross Fischer

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Education

Master of Science in Aerospace Engineering (Current — Online) **Antic. 2025**
University of Colorado, Boulder - 4.0 GPA *Boulder, CO*

Bachelor of Science in Mechanical Engineering **Aug. 2013 – May 2018**
University of Colorado, Boulder - 3.9 GPA *Boulder, CO*

Select Coursework:

- (current) Spacecraft Design
- Stat. Est. for Dyn. Systems
- Aerospace Environment
- Engineering Integration
- Data Analysis & Meas.
- Circuits & Electronics

Certifications & Online Courses:

- Studying for INCOSE ASEP Cert.
- Fundamentals of Eng. (NCEES)
- C++ Programming (Udemy)
- SQL Essentials (LinkedIn Learning)
- CompTIA Network+

Experience

Development Engineer **June 2021 – January 2023**
Spirit Engineering, Inc. *Grand Junction, CO*

- Contributed engineering efforts to the development & integration of a novel aviation engine and Light Sport Aircraft
  - Interfaced prototype hardware, software, and operator controls using Python, JIRA, mechanical & electrical tools
  - Contributed to PDRs, CDRs for engine parts and systems with focus on tolerancing, material reqs., & integration
  - Performed configuration management on engineering drawings, BOMs, and cost-tracking spreadsheets
  - Verified test requirement compliance with FAA standards, and engineering drawings with ASME Y14.5 standards
  - Interfaced with suppliers to communicate technical drawing information and provide feedback on supplied parts
- Managed Data Pipeline and Oversaw Test Cell Operations:
  - Automated data reduction, improving test capacity by more than 100% using Python
  - Analyzed and visualized test cell data extensively using Python and reported results to team members
  - Designed, implemented, and documented tests for aircraft systems following FAA requirements
  - Communicated test plans & objectives to team, ensuring quality results while maintaining personnel safety
- Contributed additional technical skills as needed:
  - Utilized FAA, ASME, and ISO standards to guide part design and production
  - Researched production methods, hardware/equipment, materials, etc, when balancing cost and performance
  - Used CREO & Fusion 360 to perform CAD modeling and develop thermal simulations of systems and parts
  - Taught technicians proper use of inspection tools, oscilloscopes, functional gauges, and more

Site Supervisor
Singletrack Trails ColoradoCMUAs a Computer Technician, I used Linux to monitor networks and remotely interface with assets, tr

- After Covid ceased Peace Corps service, I organized people and logistics to complete trail construction contracts

Project Manager **July 2018 – March 2020**
United States Peace Corps *Tanzania*

- Wrote and implemented 4 federal grants funded by working with local stakeholders to identify areas of need, and define project requirements, performance indicators, budgets, progress reports, and observation plans
- Successfully drilled 60m borehole, installed water pump, organized 4 student conferences, distributed health care supplies, and expanded physics offerings at a Secondary School
- Developed internal website to improve resource access for staff and service members
- Elected as Cohort's PSIDN representative (Peer Support, Inclusivity, & Diversity Network)
- In a challenging environment I formed new relations with people and orgs. to identify areas of need in a rural community

Data Analyst - Summer REU **May 2017 – August 2017**
International Arctic Research Center, w/ Chief Scientist Dr. John Walsh *Fairbanks, AK*

- Performed data analysis on micro-meteorological tower data and climate models to answer hydrological science questions
- Developed algorithms and scripts to validate models using statistical relations and tests — MATLAB
- Authored and published research paper & findings in Journal of ACS, presented orally at AGU '17 (paper below)
- Provided research foundation for successful funding of future climate model studies

Undergraduate Internships **August 2013 – May 2018**

CMU IT Department, Mesa County, Ruth Powell Hutchins Water Center, RiversEdge West *Grand Junction, CO*

- As a Computer Technician, I used Linux to monitor networks and remotely interface with assets, troubleshot system errors with University management software, and provided technical support to over 10000 students and 350 faculty
- As a Research Assistant, I performed field work for land-based remote sensing equipment and their data, quantified research parameters, and compiled research articles
- As a Data Analyst, I created and analyzed LANDSAT data to quantify environmental hazards, created an interactive map visualizing terrestrial data, and analyzed municipal infrastructure to support the development of safe infrastructure

Publications & Projects

Project: *Kalman Filters for Estimating Satellite Orbit Trajectory using Optical Measurements | MATLAB* **2023**

- I worked in a team to implement Kalman filters to estimate the state of a spacecraft orbiting an asteroid using optical measurements in the presence of Solar Radiation Pressure, and Process & Measurement Noise

Project: *LLA to ECEF Coordinate Conversion Program/Function | Python* **2023**

- I programmed a function (GUI Optional) converting a trajectory in LLA coordinates to ECEF coordinates, with velocity-interpolation at a given time

Capstone Project: *Fourier Analysis & Crankshaft Torsional Vibration Simulation | SolidWorks & MATLAB* **2017 – 2018**

- I worked in a team to perform a feasibility study on the implementation of Rotating Pendulum Vibration Absorbers for dampening peak harmonic torsional vibrations within aviation engine crankshaft
- I used MATLAB to perform Fourier transformations and signal processing techniques to model expected vibration reduction

Paper: *Regional Climate Model Simulation of Moisture Flux Variations in N. Terrestrial Regions | MATLAB* **2017**

- Ross Fischer, John E. Walsh, Eugénie S. Euskirchen, and Peter A. Bieniek
- Journal of ACS, Oral Presentation at AGU

Project: *CNC Controlled 3-axis Router/Sketcher | Python* **2016 – 2017**

- Integrated open-source Python software with control boards to automate 3-axis movement of a high-speed router
- Designed and assembled machine using stepper motors, extruded aluminum frame members, and custom-machined bracketry

Paper: *A Partial Solution to Modeling Anisotropic Material Prop. of FDM ABS | MATLAB* **2015**

- Ross M. Fischer, Keenan G. Jewkes, Dr. Scott Kessler
- JOM by TMS '15, Oral Presentation at TMS

Leadership & Awards

PMEL Lead (Planning, Monitoring, Evaluation, & Learning) **Aug 2020 – Dec 2023**

Engineers Without Borders *Colorado Mesa University Student Chapter*

- Led, mentored, and advised student chapter on EWB reporting requirements and project framework
- Advised chapter on technical design reviews, and helped organize logistics for domestic trips

Outstanding Graduate for Community Engagement & Magna Cum Laude **May 2018**

College of Engineering @ University of Colorado, Boulder

Research Experience for Undergraduates (REU) **May 2017**

National Science Foundation & International Arctic Research Center

Additional Skills

Languages: MATLAB, Python, LaTeX, Swahili
Frameworks: Simulink, Linux, GitHub, WordPress
Skills: Drafting & Solid Modeling & Parametric Design (Creo PTC, SolidWorks, & Fusion 360), Excellent Writing, Communication, and Presentation Skills, Team Oriented, GD&T per ASME Y14.5, Manufacturing Processes, MS Office
Familiarity With: C++, SQL, STK, DOORS, JIRA, Agile methodology