Ross Fischer

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EDUCATION & CERTIFICATES

Master of Science in Remote Sensing Focus Area (Aerospace Engineering Sciences) — **Antic. May 2025**
University of Colorado, Boulder — *Boulder, CO*

Bachelor of Science in Mechanical Engineering, *Magna Cum Laude (GPA 3.9/4.0)* — **May 2018**
University of Colorado, Boulder ('17-'18) — *Boulder, CO*
Transferred from Colorado Mesa University ('13-'16) — *Grand Jct., CO*

Semester Abroad - Economic & Social Development — **Fall, 2016**
Thammasat University — *Bangkok, Thailand*

Certificates:

- *SQL Programming Fundamentals (LinkedIn Learning)* — **Apr. 2023**
- *C++ Programming (Udemy)* — **Antic. Sep. 2023**

AWARDS & HONORS

Outstanding Graduate for International Engagement — **May 2018**
College of Engineering @ University of Colorado, Boulder

Research Experience for Undergraduates (REU) — **May 2017**
National Science Foundation & International Arctic Research Center

CU Boulder Esteemed Scholar — **Aug. 2016**
University of Colorado, Boulder

CMU Scholar – Full Ride Scholarship — **Aug. 2013**
Colorado Mesa University

WORK EXPERIENCE

Spirit Engineering, Inc. — **Jun. 2021 – Jan. 2023**
Development Engineer — *Grand Jct., CO*

- Spirit Engineering is developing a market disrupting light-sport-aircraft, in addition to a new aviation engine
- Collaborated with contractors and internal teams to organize aviation engine project
  - Defined project timelines and presented updates to executives, contractors, and vendors
  - Streamlined purchasing and inventory processes by improving software-communication
  - Used Excel and Tableau to manipulate data sets, and create visualization dashboards for test metrics
  - Managed suppliers/vendors and orders, and communicated complex information externally
- Managed and operated engine test-cell and data pipeline
  - Oversaw test cell operations: test design & implementation, result analysis, documentation, maintenance
  - Collected data across 20+ high-speed channels, collected via National Instruments DAQ to analyze data, identify trends, extrapolate, and recommend design changes
  - Performed root-cause failure analysis during engine and component prototype testing
  - Wrote Python program which automated data processing, thus improving testing capacity
  - Designed and implemented tests for prototype engine and analyzed subsequent data with Python
  - Developed program using C++ to control test cell hardware through PID feedback loops
  - Used Python to develop algorithms for thermodynamic and vibration simulations
- Contributed additional engineering skills as needed:
  - Inspected incoming parts using statistical inference to determine pass/fail rates
  - Develop products and parts using CAD for aerospace applications, designed for performance and manufacturability (SOLIDWORKS, PTC Creo, and Fusion 360)
  - Drafted engineering drawings and reviewed GD&T according to ASME Y14.5 using PTC Creo

United States Peace Corps **Jul. 2018 – Mar. 2020**

Project Manager, Physics Teacher *Mtwara, Tanzania*

- In an unfamiliar and harsh environment, I learned the Swahili language in order to integrate myself personally and professionally in a rural African community. Developed accountability within the community to finish projects and act as a role model to students
- Wrote and implemented 3 federal grants by creating & collaborating with community-based teams and orgs.
    - Prepared budgets, progress reports, and long-term observation plans for all projects
    - USAID: Water pump installation via 60-meter borehole and community-based distribution model
    - USAID: Science & History conference for students at 6 different school in the Mtwara region
    - HURU: Distribution of Washable Menstrual Pad Kits to Female Students at Namajani Day SS
- Led initiative to provide access to Junior and Senior level physics classes at Namajani Day SS
    - Taught Physics in Swahili and English to 350+ high-school level students following National Syllabi
- Elected to be PSIDN cohort representative (Peer Support, Inclusivity, & Diversity Network)
    - Handled and communicated sensitive information between volunteers and staff
    - Used WordPress to develop internal website to host committee and volunteer resources

International Arctic Research Center **May 2017 – Aug. 2017**

(Data Analyst) Research Assistant to Dr. John Walsh, Chief Scientist *Fairbanks, AK*

- Authored and published research paper & findings in Journal of ACS (see Publications)
- Orally presented findings & showcased poster at the American Geophysical Union conference, '17
- Developed algorithms and data analysis repository to analyze remote sensing data and climate models
- Visualized complex terrestrial climate data, correlations, and statistical relations using MATLAB and Tableau
- Provided research foundation to for successful funding of future climate model studies
- Validated models using in-situ observational data collected from remote sensing equipment on flux towers

Misc. Organizations **Aug. 2013 – May 2018**

Research Assistant, GIS Technician, Computer Technician *Grand Jct., CO*

- During my undergraduate tenure, I held various technical roles gaining a range of experience:
- As a Research Assistant, I:
    - Performed technical field work to support land based remote sensing equipment and their data
    - Predicted & quantified hydrological parameters using mathematical methods and hydrologic theory
    - Utilized Tableau to compile and visualize hydrological datasets and research articles
- As a GIS Technician, I:
    - Used GIS software to create and analyze remotely sensed LANDSAT imagery
    - Analyzed spatial-temporal data from Western Colorado field sites to investigate effects of elevation-based snowmelt on streamflow and water supply
    - Used ArcGIS and ArcOnline to create public interactive map visualizing hydrological data
    - Used ArcGIS to analyzed municipal infrastructure to support development of safe roads and sidewalks
- Senior Project: Feasibility of using Rotating Pendulum Vibration Absorbers to prevent crankshaft failure
- As a Computer Technician I:
    - Used Linux distributions to remotely deployed software, licenses, and computer updates
    - Managed asset tracking system and documented asset changes and deployments
    - Provided technical support and resolved problems for 10,000+ students and 350+ faculty
    - Troubleshot system errors within University's various management software
    - I used MATLAB, Fourier transformations & differential equations to develop a torsional-vibration model of our client's crankshaft to predict the reduction in vibration amplitude from the use of RPVAs

Engineers Without Borders (EWB) **Aug. 2020 – Current**

Volunteer, PMEL Lead (Planning, Monitoring, Evaluation, & Learning) *Grand Jct., CO*

- Led, mentored, and advised student chapter on EWB requirements and while on "peacekeeping" trips

Singletrack Trails **Apr. 2020 – Jan. 2021**

Site Supervisor *Colorado*

- When COVID19 caused Global Peace Corps evacuation, I spent the following season year working a covid-friendly job and supporting local trails

PUBLICATIONS & PRESENTATIONS

Regional Climate Model Simulation of Surface Moisture Flux Variations in Northern Terrestrial Regions
Ross Fischer, John E. Walsh, Eugénie S. Euskirchen, and Peter A. Bieniek
Journal of Atmospheric and Climate Sciences, Oral Presentation at the American Geophysical Union '17

A Partial Solution to Modeling The Anisotropic Mate- Rial Properties Of Fused Deposition Modeling Abs
Ross M. Fischer, Keenan G. Jewkes, Dr. Scott Kessler
JOM by The Minerals, Metals, and Materials Society (TMS), Oral Presentation at TMS Conference

ADDL. SKILLS & INTERESTS

- **Skills:** Github, Web Development, Manufacturing Processes, Swahili, Verbal & Written Communication, Microsoft Office
- **Knowledge Of:** Lean Mfg., Six Sigma,
- **Interests:** DIY Projects, Mountain Biking, Bike Touring, Traveling, International Engagement, Scuba Diving