# Ross Fischer

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## Education

**Baccalaureate of Science in Mechanical Engineering** **May 2018**
University of Colorado at Grand Junction

- Cumulative GPA: 3.94
- Outstanding Graduate for International Engagement by the College of Engineering
- Coursework: System Dynamics, Data Analysis (MATLAB), Computational Methods (MATLAB), Scientific Writing, SolidWorks, Component Design, Circuits & Electronics,

**Master of Science in Aerospace Engineering Sciences** **Antic. Dec. 2024**
**Focus: Remote Sensing**
University of Colorado at Boulder

## Professional Experience

**Data Specialist and Development Engineer, Spirit Engineering, Inc.** **July 2021 – Jan 2023**

- Oversaw test-cell operations for prototype aviation engine including test design, test-cell operation, data pipeline management, troubleshooting, and inspection and documentation
- Collected data across 20+ high-speed channels, collected via National Instruments DAQ
- Analyzed and visualized data and presented to development teams
- Automated .tdms/.hdf5/.xls data conversion using Python to reduce processing time
- Developed torsional and thermodynamic model simulations in Python to estimate engine heat rejection stability and torsional vibration response within crankshaft
- Managed data pipeline and drawing control workflows to ensure efficient use of team resources
- Developed software to control PID based roots blower for pressure control, with GUI
- Bridged theory with practical implementation for design, testing, and production of prototype engine
- Performed quality assessment on received parts using inspection tools and statistical inference to determine pass/fail rates
- Develop aerospace parts using CAD, designed for manufacturability and performance (SOLIDWORKS, PTC Creo, and Fusion 360)
- Performed basic Finite Element Analysis using Fusion 360
- Prepared engineering drawings and reviewed GD&T according to ASME Y14.5

**United States Peace Corps, Tanzania** **July 2018 – March 2020**

***Project Manager,*** Namajani Village, Mtwara

- Wrote and implemented 3 USAID grants totaling over $15,000:
  - Borehole drilling and water pump installation on school campus
  - Procurement and distribution of reusable menstrual pad kits to all female students at Namajani Day Secondary School
  - Planning and implementation of 3-day regional science conference for 30 students across Mtwara Region
- Prepared progress reports and long-term observation plans for all projects
- Developed website with HTML to organize internal committee and volunteer resources

***Physics Teacher,*** Namajani Day Secondary School

- Taught high-school level Physics in Swahili to over 350 students following national syllabi
- Initiated access to Junior and Senior level physics classes at Namajani Day SS

**Computer Technician - Colorado Mesa University** **Aug 2013 – Dec 2015**

- Utilized Linux distributions to remotely deploy software and licenses
- Managed asset tracking system by documenting asset changes and new deployments
- Provided technical support and resolved problems for 10,000+ students and 350+ faculty
- Troubleshot system errors within University's various management software

## Addl. Work Experience

**Climate Data Research Assistant – Intl. Arctic Research Center** **May 2017 – Aug 2017**
**Dr. John Walsh, Chief Scientist**

- Authored, *"Regional Climate Model Simulation of Surface Moisture Flux Variations in Northern Terrestrial Regions",* Atmospheric and Climate Sciences (ACS), presented at AGU 2017
- Processed land-based remote sensing data from flux-tower observations to validate climate models
- Programmed statistical analysis and algorithms in Python to compare model output with observed data
- Provided foundation for funding to be acquired for studies to be performed on climate models

**Terrestrial Field and Data Technician – Ruth Powell Hutchins Water Center** **Aug 2017 – May 2018**
**Dr. Gigi Richard, Faculty Director**

- Analyzed spatial-temporal data from Western Colorado field sites to investigate effects of elevation-based snowmelt on streamflow and water supply
- Combined in-situ measurements with field data to improve irrigation-needs forecasts
- Installed field sensors and organized subsequent data via standardized hierarchies

**Landsat GIS Technician - RiversEdge West** **Jan 2017 – May 2017**

- Digitized >20 miles of river bank-lines using remotely sensed Landsat imagery spanning 14 years
- Quantified bank-line stability after erosion due to removal of the invasive Tamarisk species

**Hydrological Research Assistant – Ruth Power Hutchins Water Center** **May 2016 – Aug 2016**
**Hannah Holm, Director**

- Created an interactive map for public use visualizing groundwater and stream data covering a 10,000 sq. mile watershed in Colorado
- Compiled and organized water-needs related articles and research for public access in order to support the Upper Colorado River Basin Resource Guide

## Skills & Misc. Attributes

- Cert.: SQL Programming Fundamentals
- MATLAB programming, Python programming
- Scientific & Engineering Data Analysis
- 3D Modeling and Prototyping
- Machining & Manufacturing Processes (CNC Equipment: high-power laser cutter, sheet metal bender, mills, lathes, etc)
- Quality Assessment Processes (Inspection Tools: Optical Comparator, Height Stand, Granite Block, Bore Gauge, misc. Handheld Tools)
- Demonstrated Systems & Analytical Thinker
- LINUX user, hobby-level
- Engineers Without Borders, CMU Chapter Mentor & PMEL Lead (2020-current)
- International Project Management
- Federal Grant Writing and Implementation
    - Data Collection for needs assessments, monitoring, and evaluation
- Foreign Language: Swahili (Advanced)