

Tommy Swimmer

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EXPERIENCE

Engineer in Training I

Durango, CO

Colorado Department of Transportation

September 2022 – Present

- Assists the Local Agency Professional Engineer in all aspects of project development regarding Local Agency Colorado Department of Transportation Region 5 projects.
- Passed FE Exam January 2023
- Region Leadership Team recognition for outstanding demonstration of CDOT Excellence Value: People.

Associate Photovoltaic System Designer

Remote

Sunrun

July 2021 – August 2022

- Used AutoCAD, Salesforce, and Microsoft Excel to determine photovoltaic system design, from module layout to electrical interconnections
- Designs resulted in nearly one megawatt of direct current energy installed
- Consistently performed at under 2% of “avoidable errors” tagged within completed projects

Research Assistant

Durango, CO

Fort Lewis College

February 2020 – August 2020

- Utilized spectroscopy, microscopy, and machine learning techniques to classify *E. coli* bacterial isolates
- Achieved bacteria characterization accuracy of 85%
- Created a fluorescence microscope to classify micro-fluidic droplets
- Mentored two students in subjects related to geometrical optics and laboratory safety protocols

Research Assistant

Tucson, AZ

University of Arizona

June 2019 – August 2019

- Assigned to the holography lab within the College of Optical Sciences, and applied optical knowledge under a wide range of experiments, from the creation of holographic lenses to the utilization of holographic optical elements (HOEs) for LiDAR applications
- Created an optical design to characterize volume holograms which resulted in an exposure measured at 43% diffraction efficiency, the highest recorded in the holography lab to-date.
- Demonstrated an ability to induce polymerization by successfully creating over 50 volume holograms to be tested
- Maintained safety procedures and high awareness while operating Class 4 lasers outputting a maximum of 8 watts of energy.

Research Assistant

Durango, CO

Fort Lewis College

August 2018 – December 2019

- Maintained safe design practices of ballistic imaging experiments with a Class 4 femto-second pulsed laser system
- Created a program to control a motorized translation stage used for ballistic photon imaging with an optical Kerr gate within 300 nanometer precision
- Collected flow analysis data using Particle Image Velocimetry via Optical Time-Sectioning (PIVOTS) of water seeded with polystyrene beads
- Created a 4f optical correlator to demonstrate principles of Fourier Optics to a class

Retail Sales Agent

Flagstaff, AZ

Suddenlink Communications

July 2015 – December 2017

- Addressed all customer service issues regarding phone, internet, and cable television products
- Established empathetic interactions in order to achieve customer satisfaction
- Travelled 188 miles at least 3 days per week to assist Payson office location for several months
- Obtained mastery of the customer relationship management software to reduce customer waiting time

EDUCATION

Fort Lewis College

Durango, CO

Bachelor of Science in Engineering

January 2018 – August 2021

Coconino Community College

Flagstaff, AZ

Associate of Applied Science in Environmental Technology

August 2016 – December 2017

PROJECTS

Solar Data Collector | *Python*

December 2020 – April 2021

- Created a program that can determine altitude, azimuth, and irradiance from the Sun given a set of coordinates and date

Metallic Testing of Specimens | *MATLAB*

April 2020

- Analyzed material properties of annealed, quenched, and tempered steel

Exposure Schedule for the PQ/PMMA Holographic Medium | *MATLAB*

June 2019 – August 2019

- Created an optical design to characterize volume holograms for diffraction efficiency

Photovoltaic System Design | *PV Watts, Google Project Sunroof*

January 2017 – May 2017

- Determined solar array size and layout using utility bill data and residence location

SKILLS

Technical: AutoCAD, Solidworks, Microsoft Excel, Abaqus FEA, Soldering, Carpentry

Languages: MATLAB, Python, L^AT_EX, C, EES, R

Developer Tools: Git, VS Code, Google Colab, Rstudio, Arduino IDE

Libraries: pandas, NumPy, Matplotlib, tidy, ggplot, pysolar, BeautifulSoup