Spencer Riley

Contact Information

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Dev Board	: `board.sriley.dev`

Development Experience

C, Flutter, HTML, IDL, JavaScript, Python, R, Shell, Docker, Jupyter, Kubernetes,

Work History

Present
24 Aug 2022

Graduate Teaching Assistant [Montana State University]

Within the Physics Department, my responsibilities while in this position involved:

- Supervising and assisting in undergraduate physics laboratory classes.
- Assisting instructors with grading assignments.
- Tutoring physics students

29 Jul 2022
22 May 2022

Post-Bachelor's Researcher [Institute of Complex Additive Systems Analysis]

22 May 2022
05 Sep 2017

Research Intern

During my time in these positions, my contributions to projects I have worked on include:

- Data preprocessing for language detection models
- Developing analytical methods for RF and Bluetooth models
- Internet-Of-things research and metadata configuration
- Writing Helm Charts for several Kubernetes applications

The last project I worked on applied acoustic analysis as a method to detect aircraft.

16 Aug 2017
06 Sep 2016

High School Work Study [National Security Agency]

As a requirement of this position, I had to pass a background check and a federal investigation to obtain a Top Secret security clearance. The tasks I was assigned involved clerical work relating to inventory, data transfer requests, and documentation management. In addition, I was a part of the effort to prepare for the Inspector General's inspection.

Education

Present
Aug 2022

Ph.D. Physics [Montana State University]

GPA: 2.85

May 2022
Aug 2017

B.Sc. Physics [New Mexico Institute of Mining and Technology]

Astrophysics and Atmospheric Physics Option
Minor in Mathematics

GPA: 3.28

Publications

18 Mar 2022

Atmospheric precipitable water vapor and its correlation with clear-sky infrared temperature observations

Vicki Kelsey, Spencer Riley, Kenneth Minschwaner
Atmospheric Measurement Techniques
10.5194/amt-15-1563-2022

Presentations

Apr 2022
Lubbock, TX

The Precipitable-Water Model Analysis Tool: An open-source suite for estimating precipitable water with low-cost instrumentation.

National Weather Service, 5th Texas Weather Conference

Apr 2022
Lubbock, TX

Atmospheric Precipitable Water and its Correlation with Clear Sky Infrared Temperature Observations

National Weather Service, 5th Texas Weather Conference

Jan 2020
Boston, MA

Atmospheric Precipitable Water and its Correlation with Clear Sky Infrared Temperature Readings

American Meteorological Society Annual Meeting 100

Nov 2019
Providence, RI

Atmospheric Precipitable Water and its Correlation with Clear Sky Infrared Temperature Readings: Data Analysis

Physics Congress 2019

Research Projects

Present

Jan 2019

The Precipitable Water Project

The purpose of the research is to develop a method to estimate the amount of precipitable water from the effective temperature using low-cost instrumentation. As a part of the data collection process, we collected daily ground and sky temperatures to be analyzed by our preprocessing and analysis software suite.
Collaborators: Vicki Kelsey, Dr. Kenneth Minschwaner
Documentation Page: `pmat.app`

Development Projects

Maintained
v2.0

Precipitable-Water Model Analysis Tool

A computational utility to analyze the data to quantify the relationship between the zenith sky temperature and precipitable water.
Documentation Page: `docs.pmat.app`

Not Maintained
v1.0.2

pacviz

A R package comprised of informal, radial data visualizations for regression and comparative analysis.
Documentation Page: `pacviz.sriley.dev`