







Spencer Riley

 (505)205-9115

 sriley.dev

 academic@sriley.dev

 github.sriley.dev

 board.sriley.dev

Development Experience —

C Javascript Python R

Bash HTML

sklearn TensorFlow

Docker Flask GCloud GitHub

Raspberry Pi Arduino

Currently Learning —

Java

TensorFlow Quantum

QISKit Kubernetes

Android

Work History

Present	Research Intern	Institute of Complex Additive Systems Analysis
05 Sep 2017	The position involved tasks regarding a variety of different projects around the theme of complex systems analysis. As a part of a team, I have worked on projects regarding data preprocessing for language detection models, analysis of RF and Bluetooth models, and Internet-Of-Things research and development.	
16 Aug 2017	High School Work Study	National Security Agency
06 Sep 2016	The position required a thorough background check, federal investigation including a polygraph, as part of the application in order to obtain Top Secret security clearance. Most of the tasks that were assigned revolved around clerical work, specifically inventory and data transfer requests added with Inspector General inspection preparations.	

Education

May 2022	B.Sc. Physics	New Mexico Institute of Mining and Technology
Aug 2017	Astrophysics and Atmospheric Physics Option Minor in Mathematics GPA: 3.26	

Publications

Under Review	Atmospheric Precipitable Water and its Correlation with Clear Sky Infrared Temperature Observations
	<i>Vicki Kelsey, Spencer Riley, Kenneth Minschwaner</i> Atmospheric Measurement Techniques 10.5194/amt-2021-130

Presentations

Jan 2020 Boston, MA	Atmospheric Precipitable Water and its Correlation with Clear Sky Infrared Temperature Readings <i>Vicki Kelsey, Spencer Riley</i> American Meteorological Society Annual Meeting 100
Nov 2019 Providence, RI	Atmospheric Precipitable Water and its Correlation with Clear Sky Infrared Temperature Readings: Data Analysis <i>Spencer Riley, Vicki Kelsey</i> Physics Congress 2019

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Development Projects

AtmosAccess:

A Python package to retrieving atmospheric data. The goal of this project is to easily connect with the NOAA Data Access API and the Suominet database to consolidate PMAT dependencies.

Python atmospheric data

pacviz:

A R package comprised of informal, radial data visualizations for regression and comparative analysis.

docs: `pacviz.sriley.dev`

R visualization

Precipitable-Water Model Analysis Tool:

An open source software suite for the analysis of precipitable water.

docs: `docs.pmat.app`

R Python Docker
regression analysis

SALSA Mobile App:

A mobile application that displays astronomical, solar, and meteorological data based on user location.

docs: `salsa.sriley.dev`

Java Android

Research Projects

Present

Jan 2019

The Precipitable Water Project

This research is based on developing a computational model of the relationship between daily precipitable water measurements and the atmospheric temperature. The goal of this research is to develop and utilize the relationship using low-cost instrumentation to deduce the amount of precipitable water from the effective temperature.

Collaborators: *Vicki Kelsey, Dr. Kenneth Minschwaner*

Documentation Page: `docs.pmat.app`

Present

Sept 2021

Some Analysis for Looking at the Sun's Atmosphere

A project that aims to develop methods and utilities for observing the Sun's photosphere and outer atmosphere via low-cost instrumentation. A major milestone for this project is the development of the SALSA mobile application which will display data regarding astronomical objects, the weather, and solar information.

Documentation Page: `salsa.sriley.dev`