Spencer Riley

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Development Experience

C | Bash | Javascript | Python | R | HTML | Docker | GCloud | GitHub | Raspberry Pi | Arduino | Android

Work History

Present — 05 Sep 2017

Research Intern — **Institute of Complex Additive Systems Analysis**

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 — 06 Sep 2016

High School Work Study — **National Security Agency**

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 — Aug 2017

B.Sc. Physics — **New Mexico Institute of Mining and Technology**

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
Vicki Kelsey, Spencer Riley, Kenneth Minschwaner
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
Vicki Kelsey, Spencer Riley
American Meteorological Society Annual Meeting 100

Nov 2019 — Providence, RI

Atmospheric Precipitable Water and its Correlation with Clear Sky Infrared Temperature Readings: Data Analysis
Spencer Riley, Vicki Kelsey
Physics Congress 2019

Spencer Riley

Development Projects

AtmosAccess:
A Python package to retrieving atmospheric data.

Python | atmospheric data

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pacviz:
A R package for informal data visualizations

R | visualization

Precipitable-Water Model Analysis Tool:
An open source software suite for the analysis of precipitable water.

R | Python | Docker | regression analysis

SALSA Mobile App:
A mobile application that displays astronomical, solar, and meteorological data.

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 utilties 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`