





# Spencer Riley

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## Development Experience —

- CFlutterJavascriptJava
- PythonR
- BashHTML
- DockerKubernetes
- AndroidArduinoRaspberry Pi

## Work History

|             |  |  |
|-------------|--|--|
| Present     | Graduate Teacher's Assistant   | Montana State University                       |
| 24 Aug 2022 |  |  |
| 29 Jul 2022 | Post-Bachelor's Researcher   | Institute of Complex Additive Systems Analysis |
| 22 May 2022 | Research Intern  |  |
| 05 Sep 2017 | During my time in this position, my contributions to projects I have worked on include: <ul style="list-style-type: none"><li>Data preprocessing for language detection models</li><li>Developing analytical methods for RF and Bluetooth models</li><li>Internet-Of-things research and metadata configuration</li><li>Writing Helm Charts for several Kubernetes applications</li></ul> The last project I worked on applied acoustic analysis as a method to detect aircraft. |  |
| 16 Aug 2017 | High School Work Study   | National Security Agency                       |
| 06 Sep 2016 | 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  | Ph.D. Physics                               | Montana State University                      |
| Aug 2022 | Dissertation in TBA                         | GPA: TBA                                      |
| May 2022 | B.Sc. Physics                               | New Mexico Institute of Mining and Technology |
| Aug 2017 | Astrophysics and Atmospheric Physics Option | GPA: 3.28                                     |
|          | Minor in Mathematics                        |   |

## 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

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Apr 2022  
Lubbock, TX

**The Precipitable-Water Model Analysis Tool: An open-source suite for estimating precipitable water with low-cost instrumentation.**  
*Spencer Riley, Vicki Kelsey*  
National Weather Service, 5<sup>th</sup> Texas Weather Conference

Apr 2022  
Lubbock, TX

**Atmospheric Precipitable Water and its Correlation with Clear Sky Infrared Temperature Observations**  
*Vicki Kelsey, Spencer Riley*  
National Weather Service, 5<sup>th</sup> Texas Weather Conference

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

## Research Projects

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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

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Maintained  
v2.0

### Precipitable-Water Model Analysis Tool

An open source software suite for the analysis of 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`