

## Patrick Steffanic, Ph.D.

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Python – 6 years	Data Collection – 2 years	Feature Selection/Engineering – 3 years
Pandas – 5 years	Data Wrangling – 2 years	Model Training/Evaluation – 3 years
SQL – 2 years	Data Visualization – 4 years	Model Interpretation – 2 years
Google Cloud Platform – 3 years	Data Communication – 5 years	Statistical Modelling – 2 years
Git - 8 years	Distributed Data – 1 year	Large Language Models – 1 year

## Projects

### The Risk of Recurring Wildfires 2024

- Collected data from USGS website on wildfires and implemented data pipeline using Python and SQL .
- Explored and visualized data, extracting key insights that helped in modelling wildfire recurrence.
- Conducted statistical analysis to estimate adjusted insurance premiums in wildfire prone areas, adding value and urgency to the claims in the existing report.

### LLM Agent for r/explainlikeimfive 2024

- Implemented data pipeline to ingest reddit posts from the reddit API and respond in a comment.
- Implemented an LLM agent using LlamaIndex and Ollama to generate answer to questions on r/explainlikeimfive.
- Explored cloud solutions for accelerating inference, deploying Ollama to AWS, GCP, and Azure.

## Experience

### University of Tennessee – Graduate Research Assistant

June 2018 – Present, Knoxville, TN

- Collected, cleaned, and manipulated big(10 TB) data using C++ for processing, and Python for visualization.
- Reduced model uncertainty in particle identification by up to 90% using previously overlooked data.
- Led machine learning initiatives resulting in 3 peer-reviewed publications and improved research methodologies.
- Effectively communicated complex data through visualizations at conferences and within my team.

### ALICE – Detector Operations Manager

August 2022, Geneva, Switzerland

- Managed a team of 12 to maintain 85% data-taking efficiency, ensuring high-quality data collection.
- Presented detailed operational status reports and insights to stakeholders.
- Developed and implemented training materials and instructions for crew members daily.

### Mentor eData – Data Scientist

January 2014 – January 2015, San Luis Obispo, CA

- Explored solutions for path interpolation from GPS breadcrumbs, and analyzed user driving behavior, refining driver scoring models to maximize variance.
- Participated in code review and followed CI/CD and testing guidelines.
- Collaborated with a cross-functional team through whiteboard discussion and pair programming.

## Education

University of Tennessee, Knoxville, TN — *Physics Ph.D.*

June 2018 - May 2024 *Tennessee Graduate Research Excellence Fellowship Recipient*

Cal Poly, SLO, CA — *Physics B.S. + Mathematics B.S.*

Sept 2013 - June 2018 *Cal Poly Champion Recipient*