

# PRAHLAD SIWAKOTI

Materials Physicist

Data Scientist

☎ 225-210(0199)

📍 Harrisburg, PA

🐙 [github.com/siwa-p](https://github.com/siwa-p)

🌐 [prahlad-siwakoti](https://www.linkedin.com/in/prahlad-siwakoti)

## SUMMARY

I am an experimental Materials physicist turned Data Scientist. My research focused in synthesizing quantum thin film materials which are otherwise inaccessible in Nature in search for novel phases rooted in the fundamental physics. I have used data from a wide range of measurements sources to analyze and investigate these phases of matter throughout my career and presented my findings through publications in academic journals and research conferences. I am looking forward to integrate my educational experience, research background and programming tools to solve complex problems.

## SKILLS

<b>Languages:</b>	R, SQL, Python
<b>Version Control:</b>	Git/Github
<b>Visualization:</b>	ggplot, Matplotlib, R-Shiny
<b>Machine Learning:</b>	Sci-kit Learn, Tensorflow, Pytorch
<b>Query:</b>	SQL
<b>Additional Skills:</b>	Object Oriented Programming Debugging

## EXPERIENCE

- 9/2023 – 7/2024 **Data Science Trainee** Nashville Software School
- Gathered various real world data through APIs, Webscraping and SQL query.
  - Used python's Pandas library and R's Tidyverse library to perform exploratory data analysis on the collected data.
  - Built and investigated statistical models with scikitlearn and statsmodels library
  - Designed and implemented and end-to-end machine learning project using scikit-learn and Pytorch
  - Performed data visualization with matplotlib, seaborn and ggplot as well as prepared Dashboard with R-Shiny.
  - Project management and version control with Git and Github
- 11/2021 – 12/2023 **PostDoctoral Researcher** University of Tennessee at Knoxville
- Designed and executed experiments in the field of Quantum thin films, creating novel functional properties in artificial structures. Successfully completed projects resulted in publications in reputable academic journals.
  - Wrote successful synchrotron beamline proposals and performed experiments on site in Advanced Photon Source, Argonne National Lab
  - Developed and maintained a data analysis pipeline for synchrotron data using Python and R
  - Wrote python scripts to simulate observed data and to perform statistical analysis
  - Collaborated with researchers from various disciplines to analyze, interpret data and deduce conclusions
  - Provided mentorship and training to graduate students with research, instrumentation, and troubleshooting
- 01/2018 – 11/2021 **Graduate Research Assistant** Louisiana State University, Baton Rouge
- Explored non-trivial physics of transition metal oxide perovskite thin films with respect to their symmetry and growth orientation and studied various two-dimensional defects.
  - Provided training to undergraduate students with research, instrumentation, and troubleshooting

## PROJECTS

- Final-Capstone **Air Quality: Machine learning models applied to air quality data** LINK
- Constructed a predictive model for air-quality monitoring from data obtained from inexpensive air-sensors by PurpleAir and various meteorological data. I have utilized various tree-based spatio-temporal models as well as neural networks to predict the air quality.
- Midcourse-Capstone **Wildland fires and their effects on visitation data in US National Parks** LINK
- Created an interactive R Shiny app of various National Parks in the US featuring wildfire events in the past to visualize the effect of these events in the park visitation statistics.

## EDUCATION

- 01/2024 – Present **Masters in Data Science (Online)** University of Texas at Austin
- Courses taken: Machine Learning, Probability and Statistical Inference, Data visualization, Algorithms, Advanced Predictive Models, Deep Learning, Natural Language Processing, Reinforced Learning, Data Science for Health.
- Graduation date: Fall 2024
- 09/2023 - Present **Data Science Apprenticeship** Nashville Software School, Nashville, TN
- Intensive part-time boot-camp focusing on data science fundamentals and problem solving
- Graduation date : June, 2024

08/2015 - 11/2021 **PhD in Physics**

Louisiana State University, Baton Rouge, LA

Dissertation:

Effects of Structure, Crystallographic Orientation, and Dimensionality on Emergent Properties of Transition Metal Oxide Thin Films

08/2011- 03/2014 **Masters of Science in Physics**

Tribhuvan University, Kathmandu, Nepal

Dissertation:

*First-Principles Study of Neutral  $(N_2)_n$  and Singly Cationic  $(N_2)_m^+$  Molecular Nitrogen Clusters; ( $n = 1, 2$  and  $m = 1, 2, 3, 4, 5$  and  $6$ )*

## PEER REVIEWED PUBLICATIONS

---

Link to Google Scholar :

Prahald Siwakoti