PRAHALD SIWAKOTI Data Scientist

Physicist

Portfolio • Harrisburg, PA

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in prahald-siwakoti

SUMMARY -

I am an aspiring Data Scientist with a background in experimental physics. In my career as a researcher, I have experience combining rigorous scientific methodology with advanced analytics to solve complex problems and presented my findings through publications in academic journals and research conferences. As a data scientist, I have built statistical and machine learning models to derive insights from complex datasets using Python, R, SQL, and other open-source tools. I have leveraged cloud functions (Azure, Google Cloud) to automate and scale data pipeline tasks such as data ingestion, transformation, and event-driven processing. I am looking forward to integrating my educational experience, research background, and programming tools to solve complex problems.

SKILLS	Databasa	Additional
 Python R SQL SAS Visualization: Power BI ggplot Matplotlib R-Shiny Machine Learning Scikit-learn Tensorflow Pytorch 	 Database: Database Design PostgreSQL MongoDB Engineering: API Data Retrieval Docker Data Ingestion SQL Scripting Data Migration SFTP Cloud Functions (Azure, Cloud) 	 Additional: Debugging Time-Series Analysis Deep Learning Version Control (Git/GitHub)
EDUCATION —	Masters in Data Science Courses taken: Machine Learning, Probability rithms, Advanced Predictive Models, Deep Le Learning, Data Science for Health.	University of Texas at Aust i and Statistical Inference, Data visualization, Algc earning, Natural Language Processing, ReInforce
9/2023 - 7/2024	Data Science Apprenticeship Intensive part-time boot-camp focusing on d	Nashiville Software School, Nashville, T lata science fundamentals and problem solving
8/2015 - 11/2021	PhD in Physics Dissertation: Effects of Structure, Crystallographic Orienta of Transition Metal Oxide Thin Films	Louisiana State University, Baton Rouge, L tion, and Dimensionality on Emergent Propertie
8/2011 – 3/2014	Masters of Science in Physics Dissertation: First-Principles Study of Neutral ((N ₂) _n) and Sin = 1, 2 and m = 1, 2, 3, 4, 5 and 6)	Tribhuvan University, Kathmandu, Nepagly Cationic ((N_2) $_m^+$) Molecular Nitrogen Clusters; (
DATA SCIENCE	EXPERIENCE	
05/2025 – Present	Data Engineering Bootcamp	Nashville Software Scho

- Designed and implemented data ingestion pipelines to collect data from REST APIs and local storage sources
 - Automated extraction, transformation, and loading (ETL) of structured and unstructured data
 - Working with cloud-based data storage and processing tools
 - · Collaborating on real-world data engineering projects in a team setting

Nashville Software School

Data Scientist Apprenticeship 9/2023 - 7/2024

- Wrangled data and performed exploratory data analysis using Python's pandas library and R's tidyverse packages
- Created data visualizations using matplotlib, seaborn, and ggplot2
- Retrieved and analyzed data using PostgreSQL and sqlalchemy
- · Built and evaluated statistical and machine learning models using the scikit-learn and statsmodels libraries
- Developed and evaluated machine learning models for classification and clustering tasks, with hands-on experience interpreting confusion matrices, ROC curves, and precision-recall metrics.
- Applied natural language processing using the nltk and spaCy libraries
- Performed network analysis on graph data using Neo4j
- Built and deployed interactive data visualizations using the R Shiny library
- Source code version control with Git/GitHub
- Project management/tracking with GitHub project boards and issue tracking

PROFESSIONAL EXPERIENCE -

11/2021 - 12/2023 **PostDoctoral Researcher**

- Developed and maintained a data analysis pipeline for large-scale synchrotron data using Pvthon 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.

SELECTED PROJECTS

Time-Series Forecasting : A python Implementation

Exploration of various time-series forecasting methods using Python. Various statistical and machine learning models were implemented to predict the future values of a time-series data and compared with the actual values. The models include ARIMA, XgBoost, and LSTM.

Skills: Time-Series Analysis, Data Wrangling, Data Cleaning, Data Visualization, LSTM, XgBoost, ARIMA, Pytorch

Air Quality: Machine learning models applied to air quality data

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.

Skills: Time-Series Analysis, Spatial regression, Kriging interpolation, Machine Learning, Deep Learning, Data Visualization

Wildland fires and their effects on visitation data in US National Parks

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.

Skills: ARIMA forecasting, R Shiny, Data Wrangling, Data Cleaning, webscraping

Other Projects

PEER REVIEWED PUBLICATIONS

Google Scholar :

Prahlad Siwakoti

LINK

LINK

LINK

Portfolio

University of Tennessee at Knoxville