

PROFILE SUMMARY

Data scientist with over one year of experience in analytics and machine learning, having completed four open-source projects addressing challenges in healthcare, precision agriculture, and climate risk modeling. Proficient in statistical analysis, programming, and predictive modeling to extract actionable insights.

Previously, a computational physicist with more than eight years of research experience in mathematical modeling of materials and detector simulation. Authored seven peer-reviewed articles in reputed scientific journals and presented research at international conferences. Experienced educator in physics, mathematics, and programming, with a focus on effective communication and clear instruction.

TECHNICAL SKILLS

- **Programming-** Python (NumPy, SciPy, Pandas, Matplotlib, Seaborn, Scikit-Learn, PyTorch).
- **Databases-** SQL.
- **Data Analytics and Visualization-** Microsoft Excel, Power BI, Tableau.
- **Web Frameworks-** Flask, FastAPI.
- **Cloud Platforms-** AWS (Amazon S3, Sagemaker, Lambda), Azure (Azure Machine Learning, Data Lake, Functions).

PROFESSIONAL EXPERIENCE

Omdena, Remote (Freelance)

Machine Learning Engineer

12/2022 – Present

- Managed the deployment of a climate risk model for East African school SMEs via FastAPI, collaborating with the Kenyan climate fintech startup PeerCarbon. Achieved an R^2 score of 0.85 with a CatBoost Regression model by leveraging satellite emissions data and county-specific weather and economic indicators.
- Implemented a satellite-driven machine learning recommendation application with over 90% accuracy using bagging and boosting classification models (Random Forest and XGBoost); integrated soil moisture, temperature, and precipitation data to optimize millet crop selection for the India (Kutch) local chapter project.
- Engineered a Streamlit web application that attained 87% accuracy in classifying healthy and cancerous red blood cells using image augmentation and transfer learning with a pre-trained deep learning model for the Liverpool local chapter project.
- Spearheaded a 40-member data science team for the Sri Lanka local chapter project, predicting autism in toddlers through machine learning; analyzed data and transcripts to identify six key features for early autism detection.

Indian Institute of Science Education and Research (IISER), Tirupati

Research Fellow (Department of Physics)

11/2016 – 12/2021

- Analyzed atomically thin two-dimensional materials using Density Functional Theory and advanced quantum mechanical algorithms; published 7 research articles in top-tier international journals.
- Presented compelling research posters and delivered impactful research talks at 7 national and international conferences, garnering 2 awards for Best Poster Presentation.
- Taught Python programming to first year undergraduate students as a Teaching Assistant for 2 semesters.

Indian Institute of Technology (IIT), Guwahati

Research Fellow (Department of Physics)

1/2014 – 07/2016

- Executed comprehensive detector simulation and data analysis of 2 – 10 GeV electromagnetic showers for DUNE project at Fermilab, USA.
- Collaborated on the commissioning and operational procedures for a 35-ton liquid argon far detector prototype at Fermilab, USA over a 6-month guest scientist assignment in 2015.

EDUCATION

- **Diploma in Data Science** 01/2022 – 12/2022
 - Indian Institute of Technology (IIT) Madras [9.1/10 CGPA]
- **M.Sc. (Physics)** 07/2011 – 06/2013
 - Indian Institute of Technology (IIT) Delhi [8.367/10 CGPA]
- **B.Sc. Physics (Hons.)** 07/2008 – 06/2011
 - St. Xavier's College (Autonomous), Kolkata [7.59/10 CGPA]

CERTIFICATIONS

[Microsoft Certified: Azure Data Scientist Associate](#) | [Microsoft Certified: Azure Fundamentals](#) | [NISM Certified Research Analyst \(Finance\)](#)

PROJECTS

- Engineered a machine learning binary classifier using Random Forest/XGBoost and predicted customer preferences for marketing discounts/offers in the dining/takeaway industry; achieved a 64% accuracy rate (mean F1 Score) on survey data.

ACHIEVEMENTS

- Awarded best research poster presentation at Symposium of Advanced Simulation Methods at Indian Institute of Technology (IIT) Delhi and 64th DAE Solid State Physics Symposium at Indian Institute of Technology (IIT) Jodhpur in 2019.
- Conferred the Inspire Scholarship from Department of Science and Technology (DST), Government of India from 2008 to 2013 for being in top 1% of class XII Board Examination.