Paras Pokharel

8254386076 | 6076paras@gmail.com | Personal Website | Linkedin | Github | Vancouver, BC

PROFESSIONAL SUMMARY

MSc in Physics graduate with 3+ years of experience in machine learning and data science, skilled in Python, SQL, and C++, seeking a Data Scientist role.

EXPERIENCE

European Organization for Nuclear Research (CERN)   June 2022 – April 2024
Graduate Researcher   *Burnaby, BC*
- **Data Analysis:** Utilized Python and C++ to analyze high-energy particle collision data. Conducted hypothesis testing and confidence interval analysis for the search of hypothesized particles.
- **Machine Learning:** Trained, optimized, and contributed to the development of Graph Neural Networks (GNNs) that enhanced particle identification accuracy by 29%.
- **Data Visualization:** Contributed to the development of a Python package for visualizing algorithm performance and generating commonly used plots in high-energy physics, utilizing tools such as Matplotlib, Plotly, Seaborn, and Dash.
- **Collaboration:** Collaborated with an international team to analyze and interpret high-energy particle collision data. Prepared technical reports and presented findings at international conferences.

National Aeronautics and Space Administration (NASA)   June 2019 – Dec 2019
Data Science Intern   *Greenbelt, MD*
- **Data Analysis:** Applied advanced statistical techniques to conduct fit studies on astronomical data from the CHANDRA telescope, analyzing complex signal patterns and refining data models.
- **Simulations:** Performed Monte Carlo simulations of non-X-ray background radiation in the future space telescope - ARCUS, evaluating its resilience to background interference.
- **Data Visualization:** Developed Python-based visualization tools to accurately map and interpret complex astronomical signals, enhancing the understanding of space observations and aiding in data presentation.

SKILLS AND HONORS

Programming Languages: Python, R, C++
Database management: PostgreSQL, MySQL
Cloud and tools: Git, Docker, VS Code, AWS, Jira
Machine Learning: scikit-learn, TensorFlow, PyTorch, PyG, DGL
Data analysis and Visualization: Pandas, NumPy, Matplotlib, Seaborn, Plotly, Dash, Tableau.
Honours: Special graduate entrance scholarship @ SFU, Capstone Scholar @ Howard University, National Delegate at International Young Mathematician Convention (IYMC 2012) held in Lucknow, India

PROJECTS

PitchProphet - end to end ML prediction tool | *Python, Flask, HTML, CSS, Git, AWS*   Nov 2024 – Present
- Developed an end-to-end ML pipeline for predicting football match outcomes across Europe's top 5 leagues, achieving 60%+ accuracy.
- Implemented robust web scraping system using BeautifulSoup and pandas to collect 10+ years of historical match data for major European from fbref.com
- Engineered ML pipeline with 50+ statistical features (rolling metrics, performance trends) and implemented classifier using modular design patterns.
- Built and deployed Flask web application on AWS EC2 to visualize predictions, incorporating automated data refresh pipeline for real-time updates.

EDUCATION

Simon Fraser University   Sept. 2021 – April 2024
Masters of Science in Physics   *Burnaby, BC, Canada*
- **Thesis:** "Tagging Emerging Jets using Graph Neural Networks(GNNs)"
- **Relevant Courses:** Machine Learning, Natural Language Processing, Statistical Mechanics

Howard University   Aug. 2017 – May 2021
BSc Mathematics and Physics   *Washington, DC, U.S.A*
- **Capstone Scholar:** Awarded merit-based scholarship valued at over USD $140,000, for 4 years.