Adit Jain

Entry- Level Data Analyst

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LinkedIn

EXPERIENCE

Computational Research Assistant,
Elementary Particle Experiment, UW
Nov 2022 - March 2023

- Calibrated energy scales of tau decay products produced in ATLAS collisions for further feature analysis
- Developed and trained a 6-node Mixture Density Network (MDN) on collision data to compute the momentum distribution of taus to classify specific decay products with 95% confidence level

Undergraduate Data Analyst,
Centre for Experimental and Nuclear Particle Astrophysics, UW
July 2021 - Dec 2022

- Used ROOT data analysis framework to extract, transform and load dataset ~ 100GB from Run 2C of Muon g-2 experiment
- Learnt and deployed PyROOT statistical and visualization tools for understanding energy and time shifts in calorimeter crystals to correct for measurement gains.
- Automated pion decay using Geant4 simulation software to tabulate output product features

Undergraduate Research Assistant,
Axion Dark Matter eXperiment, UW
Jan- March 2020; March- June 2021

- Performed efficiency measurement on RF wires for their transmission capacities to aid installation of Haloscope detector
- Developed a 0.2Hz resolution algorithm in Python to filter synthetic signals (SAGs) from collected power spectra in the ADMX project to remove false positives and enhance data quality

PROJECTS

Cellpose — *Cell Image Segmentation*

- Utilized machine learning techniques like image segmentation, classification, and genetic sequencing to gain insights into physical systems.
- Used grid search to validate CNN hyperparameters to improve the PyTorch model for image segmentation, increasing efficiency by 10%

Variable Star Photometry — *Astronomical Data Analysis*

- Observed the magnitudes of a variable star over a 4 night run using CCD equipped telescope at MRO and further calibrated the collected data
- Standardized star measurements to published data and performed time series analysis of the transformed data for submission to AAVSO

HERA — *Telescopic Radio Signal Analysis*

- Reconstructed signal data from 104 antennas using a mapmaking approach and corrected it for RFI and thermal contamination to accurately determine power spectra and identify frequencies emitted by distant galaxies

EDUCATION

University of Washington
B.S in Physics (2019- 2023)
- Dean's List '21, '22

SKILLS

Languages: SQL, Python, MATLAB, Mathematica, PowerBI, ROOT, Geant4

Other Skills: Technical Trainer, Algorithm Development, Data Visualization, Scientific Research

CERTIFICATIONS

- Machine Learning by Stanford University
- Python Programming by Microsoft Tech Assist
- Databases and SQL for DataScience by IBM
- MATLAB Training Certification by Mathworks

ORGANIZATIONS

- **Society of Physics Students (SPS):** PR Lead(2020-21), President (2021-22), VP (2022-23)
- **Centre for Learning and Undergraduate Enrichment (CLUE):** Physics Tutor (2021-22)