Divit Rawal

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EDUCATION

University of California, Berkeley — Aug. 2023 – Present
Physics, Mathematics, Electrical Engineering & Computer Science (Minor) — *Berkeley, CA*
- Relevant Coursework: Quantum Mechanics, Mathematical Physics, Advanced Programming in R, Data Structures, Deep Learning for Visual Data
- Launchpad AI/ML, Hands-On PCB Engineering Course Staff

EXPERIENCE

ExperienceFlow AI — Jun. 2024 – Present
Machine Learning Intern — *Remote*
- Developing finite state machines and graph neural networks for enterprise applications
- Simulating, analyzing, and optimizing business operations using machine learning techniques

Amazon — Aug. 2023 – Dec. 2023
OpenSearch Contributor — *Remote*
- Selected as member of 2023 OpenSearch Contributor Initiative
- Contributed to the ml-commons repository by developing machine learning algorithms, unit tests, and plugins
- Collaborated with students, industry professionals, and Amazon Machine Learning Engineers worldwide

UC Irvine, Department of Physics & Astronomy — Feb. 2022 – Jul. 2023
Researcher — *Irvine, CA*
- Developed, trained, and tested TensorFlow/Keras deep learning models to address data scarcity issues in high momentum collision analysis with >90% accuracy
- Simulated particle collisions using MadGraph, Pythia8, Delphes, and ROOT and designed/implemented reconstruction algorithms in C++ and Python to predict particle mass with <2% error

PROJECTS

AntiChess | *Python, Statistical Decision Making*
- Developed PyPI package to play and simulate antichess games with one or two players
- Implemented decision making techniques such as Minimax with alpha beta pruning and Monte Carlo Tree Search

Neural Navigator | *Graph Neural Networks, LightGCN*
- Developed deep-learning based recommender systems to recommend users activities and events in the Bay Area
- Implemented collaborative filtering using LightGCN and matrix factorization methods
- Built web application for user interaction using the React JS and Django frameworks

Physics Directed Reading Program | *Statistical Modeling, Machine Learning*
- Studied applications of statistical and thermal physics to machine learning
- Investigated statistical and machine learning methods in physics, focusing on Markov Chain Monte Carlo methods
- Delivered engaging presentation about the intersection of physics and machine learning to physics students

CERTIFICATIONS

Machine Learning — *IBM*
- Studied data analysis, supervised, unsupervised, and semi-supervised learning with a focus on deep learning
- Completed capstone project using machine learning to build recommender systems

SKILLS

Languages: Python, R, SQL, C, C++, Java, HTML/CSS, JavaScript
Frameworks: ROOT, Flutter, Flask, Mockito, ReactJS, React Native
Libraries: PyTorch, TensorFlow Keras, Pandas, NumPy, Matplotlib, SciKit-Learn, BeautifulSoup