Divit Rawal

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Education

University of California, Berkeley Aug. 2023 – Present
Physics, Intended Computer Science *Berkeley, CA*

- Relevant Coursework: Deep Learning for Visual Data, Advanced Programming in R, Data Structures, Mathematical Physics, Quantum Mechanics
- 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

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

Research-Engine | *Python, Flask, Svelte, Web Scraping, Natural Language Processing*

- Led team of 3 to develop Research-Engine, helping users efficiently find and summarize information about a topic
- Developed a full-stack web application hosted on an AWS EC2 instance using Flask and Svelte
- Implemented web scraping and natural language processing to obtain and summarize information from Google

Certifications

Decision Making and Reinforcement Learning *Columbia University*

- Studied theoretical and mathematical foundations of reinforcement learning strategies for dynamic environments
- Implemented algorithms such as Q-learning and SARSA in Python

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

Game Theory *Stanford University*

- Studied multi and single player games, using mathematical modeling to optimize outcomes

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