Divit Rawal

(425)-309-0699 | divit.rawal@gmail.com | divitrawal.com | github.com/divitr

Education

University of California, Berkeley Aug. 2023 – Present
Physics and Mathematics, Minor in Electrical Engineering & Computer Science *Berkeley, CA*

- 2023 National Merit Scholarship Finalist (awarded to <1% of students)
- Relevant Coursework: Data Structures, Computational Techniques in Physics, Computer Programs, Designing Information Devices and Systems, Linear Algebra and Differential Equations

IBM Professional Certification in Machine Learning Jan. 2023 - Jun. 2023
Certificate *Remote*

- Studied the fundamentals of machine learning including regression, clustering, classification, deep learning, and reinforcement learning
- Completed capstone project using machine learning to build recommender systems

Experience

Amazon Aug. 2023 – Present
OpenSearch Contributor *Remote*

- Selected as member of 2023 OpenSearch Contributor Initiative (<4% acceptance rate)
- Contribute to the opensearch-project/ml-commons GitHub repository by developing machine learning algorithms and plugins in Java
- Collaborate with undergraduate students, graduate students, and industry professionals across the globe under the mentorship of Machine Learning Engineers at Amazon

Kairos Academics Apr. 2023 – Present
Tutor *Remote*

- Provide one-on-one tutoring to high school students in math and science
- Develop personalized lesson plans and study strategies to address individual student needs and learning styles
- Track student progress and adapt teaching methods to ensure comprehension and academic growth

Department of Physics & Astronomy, UC Irvine 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 wrote reconstruction algorithms in C++ and Python to predict particle mass with <2% error

Projects

Statistical Mechanics of Neural Networks | *Markov Chains, Monte Carlo Estimation* Aug. 2023 – Present

- Working with a fourth-year graduate student as a part of the UC Berkeley Physics Directed Reading Program
- Studied statistical and thermal physics and their application to neural networks and machine learning through Markov Chain Monte Carlo Sampling and simulated annealing

Research-Engine | *Python, Flask, Svelte, Web Scraping, Natural Language Processing* Nov. 2022 – Apr. 2023

- Led a team of 3 to develop Research-Engine, a tool to help users efficiently find and access relevant information and research 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

Watersort Solver | *Flutter SDK, Dart, Java* Jul. 2022 – Nov. 2022

- Designed and developed Watersort Solver in Java and Flutter to quickly and accurately solve any watersort brainteaser
- Published to Google Play Store

Technical Skills

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