

# Divit Rawal

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## EDUCATION

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### 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, Computer Programs, Mathematical Physics, Mechanics and Relativity, Designing Information Devices and Systems, Hands-On PCB Engineering

### 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

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### 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](https://github.com/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

### 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

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### Amazon OpenSearch | *Java, Git, Machine Learning, Mockito*

Aug. 2023 – Present

- Selected as member of 2023 OpenSearch Contributor Initiative (<4% acceptance rate)
- Contribute to [opensearch-project/ml-commons](https://github.com/opensearch-project/ml-commons) GitHub repository by developing machine learning algorithms and plugins in Java
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### 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

## TECHNICAL SKILLS

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**Languages:** Python, C++, Java, HTML/CSS, JavaScript, SQL

**Frameworks:** ROOT, Flutter, Flask, Tensorflow/Keras, PyTorch, Mockito

**Libraries:** Pandas, NumPy, Matplotlib, SciKit-Learn, BeautifulSoup