Divit Rawal

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Education

University of California, Berkeley Aug. 2023 – May 2027
Bachelor's Degree in Physics, Mathematics, Statistics *Berkeley, CA*

- **Relevant Coursework:** Reinforcement Learning*; Deep Learning; Data Structures; Computer Vision; Probability and Random Processes; Time Series; Randomized Linear Algebra and Optimization*; Theoretical Statistics*; Numerical Analysis; Statistical Physics; Numerical Linear Algebra*; *=Graduate-Level
- **Activities:** Communication Networks Head TA; Probability & Discrete Math Peer Tutor; Launchpad AI/ML

Experience

Lawrence Livermore National Laboratory Mar. 2025 – Present
Researcher (Nuclear Science and Security Consortium Fellow) *Livermore, CA*

- Developed state-of-the-art computational framework for neutron and gamma emission prediction, improving agreement with experimental data to 98% (from 95%)
- Building novel stochastic transport framework for (α, n) reaction analysis, reducing computation time and maintaining precision for nuclear security applications

Berkeley Artificial Intelligence Research (BAIR) Sep. 2024 – Present
Researcher *Berkeley, CA*

- Conducted theoretical and empirical analysis of in-context learning in the kernel regime (Neural Tangent Kernels) to analyze origin of few-shot learning under Prof. Michael DeWeese
- Formulated a theoretical framework to validate predictions; currently authoring a publication on in-context learning without feature learning

Cisco Systems (Foundation AI) Jun. 2025 – Aug. 2025
Machine Learning Engineer (PhD Intern) *San Francisco, CA*

- Fine-tuned LLAMA3-8B models (base and Instruction Fine-Tuned) for cybersecurity applications, achieving state-of-the-art performance across models of its size on cybersecurity benchmarks
- Improved data processing pipeline efficiency by 75% and automated collection, processing, and filtering of over 4 TB of web data
- Contributed to Foundation-Sec-8B Base and Foundation-Sec-8B-Instruct technical reports, both publicly released open-source models

ExperienceFlow AI May 2024 – Sep. 2024
Machine Learning Engineer (Intern) *Remote*

- Reduced training data requirements by 99% (from 5000 to 50 samples) while maintaining 95% model accuracy by developing custom transformer, SSM, and GNN architectures in PyTorch for finite state machine prediction
- Implemented deep Q-Learning and SARSA algorithms for finite state machine optimization, with 40% improvement in reward maximization compared to baseline methods

Amazon Aug. 2023 – Dec. 2023
Software Engineer (Intern) *Remote*

- Designed and implemented a K-means clustering module in Java for the OpenSearch ml-commons repository; improved unit test coverage from 66% to 78%
- Resolved critical data pipeline issues affecting over 1 million users, reducing system downtime and improving query response times

Awards & Grants

- **VESSL AI Academia Grant:** Awarded $5,000 for independent research on entropic optimal transport acceleration using resolvent-sampled surrogates

Skills

Languages: Python, Java, C++, R, MATLAB, Julia, SQL, Mathematica
ML/AI: PyTorch, TensorFlow, JAX, OpenAI Gym, HuggingFace
Scientific Computing: NumPy, SciPy, SciKit-Learn, Monte Carlo Methods, Randomized Algorithms
Tools: Git, Google Cloud, AWS, Docker, Linux, Jupyter, Matplotlib, Pandas, BeautifulSoup, Selenium