Rishi Khare

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Education

University of California, Berkeley (EECS Department Honors) Berkeley, California
B.A. in Computer Science, B.A. in Data Science (GPA: 3.87/4.00) *August 2021 – May 2025*
Coursework: Efficient Algorithms & Intractable Problems, Data Structures, Machine Learning, Computer Security, Database Systems, Operating Systems, Computer Architecture, Discrete Math & Probability, Principles of Data Science, Computer Graphics

Experience

Berkeley AI Research (BAIR) Lab - Wagner Group *September 2023 – Present*
Machine Learning Undergraduate Researcher
- Developing security and robustness for deep computer vision neural network architectures in PyTorch against adaptive adversarial example attacks using honeypot stateful defenses with Dr. Erwin Quiring and Prof. David Wagner
- Developing LLM automated parsing with cloud APIs for security and networking logs with Julien Piet and Prof. Wagner

T-Mobile *May 2024 – Present*
Generative AI Intern
- Locally fine-tuned internal LLM tooling (Llama-3) for document retrieval and chat completion using NVIDIA H100 GPUs
- Implemented RAFT synthetic dataset generation for RAG finetuning and deployed on internal company documents
- Evaluated question-answer pairs for an internal RAG system (LLM-as-a-judge approach) and improved safety guardrails
- Presented results to the VP and submitted two utility patents for RFID tag positioning using computer vision/audio ML

Snap Inc. *March 2024 – April 2024*
Augmented Reality (AR) Development and Digital Storytelling Program Extern
- Created an AR lens with real-time facial expression tracking using Lens Studio and published it to the official Snapchat app

UC Berkeley Department of Electrical Engineering and Computer Science *June 2022 – Present*
Undergraduate Course Staff
- Teaching supervised (linear/logistic regression) and unsupervised (PCA, K-Means) learning for DS 100 (spring '24, fall '24)
- Served as TA for AI Alignment course for Berkeley's AI Safety group and facilitated course research reading group (fall '23)
- Guided students through computer architecture and assembly programming for CS 61C lab (fall '22, spring '23)
- Demonstrated discrete math & probability problem-solving techniques in discussion section for CS 70 (summer '22)

Center for AI Safety (safe.ai) *June 2023 – July 2023*
Research Intern (Volunteer)
- Developed privacy techniques for prompted data to the RoBERTa-base LLM (HuggingFace), specifically through adapters and differentially private prompt learning, and assisted postdoc researchers in troubleshooting adjacent previous work

UCSF Department of Radiology & Biomedical Imaging *September 2022 – January 2023*
Undergraduate Researcher
- Developed Gaussian image processing and contouring algorithms for tomographic XCT2 skeletal scans to analyze metatarsal bone health of diabetic patients in the Bone Quality Research Lab, supervised by Prof. Galateia Kazakia

Web Development At Berkeley *August 2021 – January 2023*
Fullstack Developer
- Built applications for high-growth startups using ReactJS/NextJS and deployed REST APIs using Express/NodeJS/Flask
- Implemented frontend for Mind&Match in Fall 2022 (startup connecting students with personalized mental health resources)

Awards & Achievements

Eagle Scout: Awarded after serving and volunteering for nine years in the Scouting program; Led the construction and donation of a large five-foot-tall wooden shoe rack to a local Hindu temple for Eagle Service Project

USA Computing Olympiad Silver Division Qualifier: Achieved a perfect score of 1000/1000 points

Inducted to Berkeley Upsilon Pi Epsilon Honor Society and EECS Department Honors Program

Amazon Web Services (AWS) Certified Cloud Practitioner: Awarded after passing a proctored AWS exam

3rd Place Winner at AI Safety Hackathon hosted at Stanford (Scalable Oversight): Created data set which validates safety of LLM prompt-response pairs for ChatGPT-3.5 using factored cognition approach (*GitHub*)

Golden Bear Orientation Leader: Selected and served as an orientation leader for incoming students to UC Berkeley

Projects | *More on GitHub*

Gitlet Version Control System
- Designed and implemented a Git version-control system in Java, which supports add, commit, branch, checkout, and merge

CoursePath
- Built and hosted course selection planning website in NodeJS/MySQL for my high school district (FUHSD)
- Gained traction by reaching students and parents through social media outreach and families in Boy Scouts troop
- Featured and recognized by district's Parent Teacher Student Alliance and presented on school's computer science homepage

Skills

Languages: Java, Python, C, Swift, SQL, HTML/CSS, Javascript, C++, C#, RISC-V Assembly, Markdown

Frameworks/Libraries: NumPy, Pandas, PyTorch, Ragas, React.js, Next.js, Node.js, Flask, SwiftUI, JUnit, Matplotlib, Seaborn, Sklearn, JavaFX

Tools: Git, GitHub, Unity, Figma, Postman, AWS, Firebase