Neel Gajare

(408) 204-0386 | neelgajare@berkeley.edu | linkedin.com/in/neel-gajare | ngajare.github.io

Education

University of California, Berkeley — Berkeley, CA
B.S. EECS (Electrical Engineering & Computer Science) — *Expected December 2025*

Relevant Coursework (3.7 GPA): Circuit Analysis & Design, Advanced Algorithms, Computer Architecture, Data Structures, Discrete Math & Probability Theory, Linear Algebra, Multivariable Calculus, Electricity & Magnetism, Mechanics, Competitive Programming

Societies: Space Technology @ Cal, Cloud Computing @ Cal, Computer Science Mentors

Experience

Berkeley AI Researcher — Dec 2023 – Present
Berkeley AI Research Lab (BAIR) — *Berkeley, CA*

- Working under Professor Kurt Keutzer on Generative AI project pertaining to low resource machine translation and linguistic segmentation.
- Utilized Langchain, Chroma, Milvus, CUDA, and NVIDIA AI endpoints to implement efficient Retrieval Augmented-Generation techniques on billion-token corpus to improve translational model. Integrating vector database to backend system and API.

Stanford Research Intern — May 2022 – Feb 2024
Stanford University — *Palo Alto, CA*

- Worked in Stanford's Crustal Deformation Lab under Professor Paul Segall. Researched complex basaltic magma chamber geometries using AI.
- 1st Author of abstract published in American Geophysical Union (AGU) conference proceedings, presented in AGU Fall Meeting.
- Utilized Gmsh for 3-D mesh generation to model magma chambers, Matlab for simulation of surface deformation and Bayesian optimization techniques.

Hackathon Organizer — Jun 2021 - Jan 2023
ThetaHacks — *Santa Clara, CA*

- Student-run hackathon with over 500 participants, 25 sponsors, 20 volunteers, and 14 events.
- Allocated $20,000 total in prizes and merchandise to competition winners and attendees.
- Leveraged strategic social media marketing by publishing blogs on various sites and creating posts across numerous social media platforms. Facilitated and supervised participants and managed events.

TieCon Entrepreneurship Bootcamp — Aug 2021 – Mar 2022
TiE Silicon Valley — *Santa Clara, CA*

- Developed startup idea for product that uses AI to fix user's sitting back posture. Designed 3-D model & mobile app.
- Received testimonials from professional therapist. Planned market strategy and projections. Won #1 Diligent Team Award @ TYE PitchFest.

Awards

- NVIDIA National Merit Scholarship — May 2023
- Climate Science Olympiad Semifinalist — Aug 2022
- St. Francis de Assisi Volunteering Award — May 2022

Projects

UniTrial | *Python, Firebase, Streamlit, HuggingFace, ChromaDB, Mistral AI* — June 2024

- Developed RAG system to match patient EHR profiles/ medical condition descriptions with clinical trials using Mistral-7B.
- Implemented novel data schema leveraging FHIR and MESH IDs to log medically relevant tags, preventing hallucinations from unstructured data.
- Created RAG pipeline with chat interface for users with to ask questions about trial & get diagnosis.

Kaggle Expert | *Python* — Mar 2019 – Present

- 2x expert in datasets & notebooks on Kaggle platform for publishing datasets & blogs which garnered over 10k dataset downloads & 200k blog views.
- Used data scraping techniques to collect large amounts of data from sites like Reddit, Twitter, and Google.
- Performed and published data analysis and applied machine learning models like CNNs, Transformers, and GANs.

TIME II | *STM32 Microcontroller, PCBA* — Dec 2023 – Present

- Working on project at Space Technology @ Cal, which will send a payload to a suborbital Blue Origin flight to conduct E. coli microgravity experiments.
- Programmed STM32 microcontroller to maintain optimal temperature in the capsule via thermistors.

Voice-Controlled Car | *Arduino, Python* — Jan 2024 – May 2024

- Built a mic-board using a band-pass filter to detect and filter out human voice frequency for voice recognition.
- Used PCA to classify words for the car to recognise and respond correctly.
- Implemented a closed-loop feedback system for the car to drive straight and turn on a micro-controller using encoder data.

Technical Skills

Languages: Python, Java, C++, Matlab, SQL, HTML/CSS, Scheme, Javascript, LaTeX
Frameworks/Tools: LangChain, Pytorch, Keras, OpenCV, Gmsh, Tableau, Windows, Requests, Numpy, JUnit, Git, WordPress, STM32Cube, Arduino, Seaborn, AWS, Node.js, Express, React, Tensorflow, MongoDB, Mongoose, OpenAI, HuggingFace, BeautifulSoup, Matplotlib, Chroma, FastAPI, Jupyter, Anaconda, Linux, Firebase, Streamlit, Milvus
Skills: AI/ML, Data Processing/Analysis, PCB Assembly, Microcontrollers, Web Development, NLP, Research