Neel Gajare

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EDUCATION

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

Relevant Coursework (3.73 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