Alok Thakrar

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Education

University of California, Berkeley — Berkeley, CA
Bachelor of Science in Electrical Engineering and Computer Sciences — *Grad Date: May 2027*

Technical Strengths

Languages: Python, Java, C, R, Bash, SQL, ARM-V8, Javascript
Tools: React, Django, Pytorch, Keras, Matplotlib, NumPy, Arduino
Developer Tools: Git, Docker, TravisCI, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse

Experience

NSF REU Research Intern — May 2025 – Present
University of Texas, Arlington — *Arlington, Texas*
- Built a 100+ hour age/context annotated database of cat vocalizations for animal speech & development research
- Evaluated SOTA vision models and trained a regressive ensemble ViT on a custom 100,000+ image pet dataset
- Created pipeline to process scraped video data using fine-tuned encoder-decoders, LLMs and segmentation models
  ↪ *Currently producing first-author publication*

Student Researcher — Feb. 2025 – Present
University of California, San Francisco — *San Francisco, CA*
- Developing tools to predict causal genes of kidney disease using machine learning and big data techniques
- Engineered a survey of methods of doublet removal for processing multiomic RNA-seq/ATAC-seq data
- Ran industry standard tools (CellRangerATAC, Suerat) to create & clean multi-sourced multiomic dataset

Software Engineering Intern — June 2023 – August 2023, June 2024 – August 2024
Enerpro Inc — *Goleta, CA*
- Programmed SPI and I2C drivers on the SAMC21 chip for a high-power 24 KW AC-DC converter
- Engineered an automated pipeline to sync, edit, and upload footage from a custom multi-cam rig across platforms
- Designed, fabricated, and programmed machine capable of semi-automated testing of 50,000+ MCUs

Student Researcher — June 2021 – May 2023
University of California, Santa Barbara — *Santa Barbara, CA*
- Simulated the effects of hypervelocity penetrators for the purpose of planetary defense using HPC
- Programmed/optimized planetary defense simulations in Unity & through Python mathematical blast wave models
- Created high powered FEA simulations to study the decomposition of asteroids upon penetrator collision

Other Experiences

Undergraduate Course Staff, *University of California, Berkeley (EECS 16A)* — *Jan 2025 – Present*
Currently hold office hours, homework parties and more for Berkeley's 300 person intro linear-algebra and signals course.

Summer Research Intern, *University of California, Santa Barbara* — *June 2022 – August 2022*
Built pipeline for millions of cryptocurrencies to assess the profitability and long term growth of Layer 2 crypto systems

Software Engineering Intern, *Pawrents* — *Sep 2024 – Jan 2025*
Worked on data visualization and AI-powered marketing tools for dog-boarding startup.

Projects

Gantry Game | *Raspberry Pi, Python, GCode* — June 2020 – Present
- Developed custom trajectory, cornering, and motion algorithms for a custom robotic photo-portait drawer
- Implemented a custom computer vision pipeline, stippling methods, and route planning hueristics for efficiency
- Eloify

Eloify | *Spigot API, Java, Maven, TravisCI, Git* — May 2018 – May 2020
- Developed a Minecraft server plugin to entertain kids during free time for a previous job
- Published plugin to websites gaining 2K+ downloads and an average 4.5/5-star review
- Implemented continuous delivery using TravisCI to build the plugin upon new a release
- Collaborated with Minecraft server administrators to suggest features and get feedback about the plugin