Ali Momennasab

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Education

California State Polytechnic University, Pomona 8/2022 - 12/2025 (Expected)
Bachelor of Science, Computer Science, Minor in Data Science Pomona, CA
Planned M.S in Computer Science (AI Focus), Fall 2026

- GPA: 3.93/4.0
- Relevant Coursework: Machine Learning, Cloud Computing, GPU Computing, Computer Vision (graduate level)

Experience

Cardiac Vision Lab, University of California, San Francisco 6/2023 - Present

- Researching deep learning segmentation methods of hearts in ultrasound images under Professor Jan Christoph.
- Implemented a U-Net model with Pytorch that captures temporal heart motion across consecutive ultrasound frames, resulting in a 16% improvement in F1 score and more realistic prediction segmentations.
- Expanded the U-Net pipeline with on-the-fly data augmentation and customizable architecture block (convolutional, residual, dense) and loss configurations, achieving a best F1 score of 0.92 with residual blocks and Dice+BCE loss.
- Automated synthetic ultrasound generation in MATLAB, producing hundreds of volumes daily to diversify our dataset.

Kosaraju Lab, California State Polytechnic University, Pomona 1/2025 - Present

- Researching classification and survival analysis of whole-slide cancer images under Professor Sai Kosaraju.
- Developed a CNN for cancer survival prediction by compacting large-scale slide images into gradient maps and reducing genomic data (DNA, CNA, mRNA) with PCA, achieving C-index survival prediction scores of 0.95 (brain) and 0.73 (lung).
- Built a vision transformer and graph neural network framework that transforms whole-slide images into tile-level embeddings to predict recurrence likelihood and cluster cancer subtypes.

Code Ninjas Hacienda Heights 6/2023 - 8/2024

- Taught 20+ elementary to high school students coding skills in Unity, Roblox Studio, and Microsoft MakeCode.
- Led weekly web development summer camps, co-developing and teaching an HTML, CSS, and JavaScript curriculum.

Projects

Research Paper Summarizer | github.com/alimomennasab/paper-summarizer 2025

- Built a web app using a React interface, Next.js routing, and Flask backend API for generating summaries of research papers with the OpenAI GPT-4o API.
- Implemented file upload handling, PDF text extraction, and prompt engineering to deliver real-time summaries.

NFL RAG Assistant | github.com/alimomennasab/NFL_RAG 2025

- Built an NFL Gradio chatbot with a RAG pipeline to deliver Q&A on the latest game stats, rosters, coaching staffs, and front offices via the Google Gemini API.
- Designed an ingest, index, and query data pipeline, embedding documents with MiniLM and storing vectors in Pinecone for millisecond retrieval.

NFL Mock Draft Simulator | github.com/alimomennasab/NFLMockDraft 2024

- Created an NFL mock draft simulator by web scraping data for 32 NFL teams, 250+ draft picks, and 200+ draft prospects with Selenium, storing the collected data in a PostgreSQL database backend.
- Designed and implemented a responsive draft simulation and interactive trade system interface with React, Next.js, and TailwindCSS, utilizing Prisma for efficient database queries.

BroncoDirectMe | broncodirect.me 2022

- Contributed to a Chrome extension used by 400+ Cal Poly Pomona students to streamline class registration, earning the Google Featured Extension badge for quality and usability.
- Built portal features with React and Material UI, integrating average GPA and RateMyProfessor displays via REST APIs.

Skills

Languages: Java, C/C++/CUDA C, Python, TypeScript/JavaScript, Swift, Kotlin
Frameworks & Tools: React, Next.js, Node.js, Express, PyTorch, TensorFlow, GitHub/GitLab, Figma
Databases & Cloud: MongoDB, PostgreSQL, Prisma, AWS, Pinecone