Amogh Patankar

408-597-2478 | apatankar@ucsd.edu | linkedin.com/in/apatankar22 | github.com/apatankar22

Education

University of California, San Diego — Sept. 2023 – June 2025
M.S., Computer Science & Engineering; ***Concentration: AI & Machine Learning*** — *La Jolla, CA*

University of California, San Diego — Sept. 2020 – March 2023
B.S., Data Science — *La Jolla, CA*

Professional Experience

AI Application Development Intern — Sept 2024 – Dec. 2024
Advanced Micro Devices (AMD) — *San Jose, CA*

- High-level software development for **AMD RyzenAI Neural Processing Unit (NPU)**; specifically, performance optimization and competitive benchmarking with Apple, Nvidia, and Qualcomm products.
- Optimized various generative AI workloads, namely transformers, large language models, convolutional neural networks (CNN), and diffusion models on AMD hardware. Enabled workloads to achieve optimal performance and power efficiency on various hardware.
- Optimization and benchmarking techniques could be applied to other CPU and GPU products (**AMD Radeon, Instinct, EPYC**).

Data Scientist (Generative AI) Intern — June 2024 – Sept. 2024
Marvell Technology Inc. — *Santa Clara, CA*

- Using generative pretrained transformer (GPT) models to generate synthetic data, using parameter efficient fine-tuning (PEFT) techniques such as low-rank adaptation (LoRA).
- Building a reinforcement learning (RL) model and deep neural networks for fundamental DSP parameter optimization.
- Stretch goal involves LLM usage and retrieval augmented generation (RAG) to automate the hardware modeling process.
- Using developer tools such as AWS S3, EC2, Bedrock, and Sagemaker, as well as Airflow, Tableau, and a Snowflake database.

Researcher — June 2023 – Present
Stanford University School of Medicine — *Palo Alto, CA*

- Developed statistical packages for multiple biomedical research teams in Python and R, for data analysis. Packages composed of chi-squared and Fisher tests amongst other statistical utilities. Led research teams mentored by Dr. Gross and Dr. Palaniappan for analyzing opioid mortality and glycemic control in Type-2 diabetics.
- All research is in preprint for top medical journals, such as Journal of American Medical Association, and British Journal of Anaesthesia.

Software Development Engineer Intern — June 2022 – Sept. 2022
Amazon Web Services (AWS) — *Seattle, WA*

- Improved latency of AWS Lex ASR (Automatic Speech Recognition) Services and AWS DataHub for conversational AI models by recommending and implementing architectural changes.
- Enabled compliant storage of critical and non-critical customer data in DataHub by designing and enhancing Lex ASR and DataHub schemas using AWS S3, Kinesis, and Lambda.
- Optimized ASR Service, allowing faster resolution of customer requests, up to ∼75%, tracked using AWS CloudWatch.

Research Intern — June 2021 – Aug. 2021
Scripps Research Translational Institute — *La Jolla, CA*

- Developed an R library to estimate genetic regulatory variation using a confidence interval estimation method.
- Implemented various statistical concepts like binomial distributions and parametric bootstrapping, and applied them to data from the Genotype Tissue Expression Project (GTEx).

Skills

- **Languages:** Python, Java, R, C++, SQL, JavaScript
- **Frameworks and Tools:** PyTorch, Tensorflow, Keras, numpy, sklearn, pandas, AWS S3, EC2, Kinesis, Lambda, SnowflakeDB, Docker, Tableau, git

Academic Projects

- **Capstone Project**: Active Learning with Neural Processes for Epidemiology Modeling
- Prediction of Causes of Patient Readmission using Large Language Model(s) (**OpenAI, Llama-7B, BART-Large**)
- Autonomous Vehicle Trajectory using Deep Learning (**Argoverse 2 Dataset**, PyTorch)
- Data Science Interview Tool (**GPT-3**, PyTorch, Python)