

Advait Gosai

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EDUCATION

University of California, Berkeley

Aug. 2024 – May 2025

Master of Engineering in Electrical Engineering and Computer Science (EECS)

- **GPA:** 4.00; Fung Excellence Scholarship

University of Massachusetts, Amherst

Aug. 2020 – May 2024

Bachelor of Science in Computer Science (Honors)

Bachelor of Science in Mathematics

- **Coursework:** NLP, AI, Machine Learning, Scalable Web Systems, Operating Systems, Databases, Linear Algebra
- **GPA:** 3.89; Commonwealth Honors College, advised by Dr. Subhransu Maji and Dr. Gottfried Schlaug

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, Golang, SQL, NoSQL, HTML/CSS

Frameworks: numpy, PyTorch, sklearn, React, Node.js, Express.js, PostgreSQL, LangChain

Developer Tools: Git, Docker, nginx, OpenAPI, Google Cloud Platform, Azure AI Studio, GDB, Linux

EXPERIENCE

Machine Learning Intern

May 2024 – Aug 2024

Dana-Farber Cancer Institute

Boston, MA

- Enhanced GPT-4 based **RAG** using **Knowledge Graphs**, improving precision by **12%** on clinical report data
- LoRA **fine-tuned** small VLMs to detect pathologies in chest x-rays, improving IoU by **34%** over base models
- Designed **adaptive few-shot** prompting methods for GPT-4V on radiology benchmarks, achieving human-level performance in localization and report generation
- Authored a manuscript (in-preparation) to publish findings, alongside internal **Azure** AI Studio documentation

Artificial Intelligence Research Assistant

Sep 2023 - April 2024

University of Massachusetts Amherst

Amherst, MA

- Developed and published a state-of-the-art brain MRI extraction tool using **Segment Anything**, achieving an **11%** improvement over existing benchmarks (NeurIPS 2023 Poster with **37** citations)
- Constructed a **synthetic data** generation pipeline using GANs and style transfer, increasing Dice Score by **16%**
- Reduced model training time by **20%** using PyTorch Lightning and **distributed training** on GPUs with DDP

Software Engineering Intern

May 2023 – Aug 2023

Balbec Capital LP

Alpharetta, GA

- Engineered **hybrid LLM search** for financial records using **crawlers** on the enterprise knowledge base, implementing subsequent LLM-based data standardization models to save **30** minutes of manual processing daily
- Optimized a **Monte Carlo** simulation of cash flows worth over **\$500M**, achieving a **7x** speed increase using multithreading and a **15%** improved accuracy with property-based testing

Full-Stack Software Engineer

May 2022 - Aug 2022

Prezence - Digital Wellness (Startup)

Boston, MA

- Led sprints to build a **React** app that served **6500** users, creating a Node and Express backend for **REST** APIs
- Improved scalability using **caching** and **indexing**, optimized **CRUD** on the **SQL** database with read replicas

PROJECTS

DebateArena (debatearena.app) | *PyTorch, React, Node, AWS, PostgreSQL*

- Co-founded an online debate practice platform providing AI generated evaluations and skill reports to **150** users
- Developed AI debate bots that combine **LLMs** with **search engines** to reason, argue and cite online sources

Autocite ([GitHub](https://github.com)) | *React, Node*

- Created an **open-source** semantic bibliography generator with **250** downloads, receiving over **30** stars on GitHub

Personal Website: advaitgosai.github.io