

# Aniket Mahajan

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## EDUCATION

### Stanford University

BS, Computer Science, GPA: 3.7

Stanford, CA

Expected Jun 2026

**Languages:** Python, C, C++, Java, BASIC, React.js, R

**Platforms:** Azure, CUDA, databases, Web Development, Docker, AWS, GCP, PyTorch, TensorFlow, Kubernetes

**Courses:** Algorithms (CS 161), Machine Learning (CS 229), Statistical Arbitrage (MSE 244), NLP w/ Deep Learning (CS 224N), Operating Systems (CS 111), Parallel Computing (CS 149), Decisions Under Uncertainty (CS 238)

## WORK EXPERIENCE

### ML Systems Researcher

HAZY - Stanford AI Lab

Stanford, CA

Nov 2024 - Present

- Researching machine learning optimization with PhD advisor Simran Arora in Chris Ré's HAZY Lab
- Exploring **test-time compute** for scaling down LLM robustness while achieving comparable performance

### Machine Learning Intern

Amazon Web Services (AWS)

Portland, OR

Jun 2024 - Sept 2024

- Researching effect of parameter selection for **Hierarchical Navigable Small Words (HNSW)** algorithms on recall of vector embeddings in **vector databases** like PostgreSQL and MySQL
- Designed and built generalizable tool to automate testing of key parameters, dataset size, and database setups—further reduced runtime through batching benchmarks in parallel
- Contributing developments to open source vector similarity search for Postgres: pgvector

### Software Engineering Intern

eTelic Inc.

Glen Allen, VA

Jun 2023 - Aug 2023

- Prototyped and launched new end-to-end web application utilizing AI **image recognition** and database backend to create sports highlights, reducing user inputted game footage time by **95%**
- Articulated objectives in cross-functional environment of 10+ members in U.S. and India for devops tasks
- Defined company workflow for incorporating machine learning with Yolov3 Darknet, Keras, and AzureVM

### Software Engineer

Transcribe Glass

Stanford, CA

Apr 2023 - May 2023

- Designed novel smart assistive glasses for hard of hearing through use of real-time audio processing and captioning
- Spearheaded in-unit transcription, implementing OpenAI Whisper API usage to meet customer needs

## PROJECTS

### Fast Speculative Decoding for Efficient Token Drafting

Dec 2024

- Developed improvement to **speculative decoding** by representing it as a **Markov Decision Process (MDP)** to adaptively optimize token candidate length (K) during text generation in LLMs.
- Achieved up to **240.7% speedup** in token throughput on HumanEval with no output quality degradation compared to vanilla speculative decoding or autoregressive baselines.

### Options Pair Trading Strategy

Jun 2024

- Managed portfolio by combining **pairs trading** and options selection to exploit inefficiencies in S&P 500
- Identified pairs with **rolling Pearson coefficients** and trained **VAR models** to predict lagged equity value in financial market with preliminary backtest showing **6%** profit yearly

### Poker Prophet: Behavior Cloning Poker Exploiter

Feb 2024

- Implemented **supervised and reinforcement learning** algorithms to generate behavior cloning estimations
- Fine-tuned model through self play with **deep Q-learning** and **K-means clustering** neural network algorithms
- Averages 1.16x profit on initial stack with final ensemble sampling implementation

## LEADERSHIP EXPERIENCE

### Stanford Entrepreneurship Clubs

Director of Business Association of Entrepreneurial Students (BASES)

May 2023 - Present

- Coordinating speaker series spanning 12 CEOs (Atlantic Records, TranscribeGlass), VCs (XFund, PearVC), & influencers (Ali Abdaal) and bonding & field trip events for 200+ students

VC3 Director of Affiliated Stanford Entrepreneurial Students (ASES)

Oct 2022 - Apr 2023

- Organized pitch competition with 16 Stanford startups & 16 VCs, including A16Z, PearVC, Softbank, & Y Combinator