Vaishak Menon

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WORK EXPERIENCE

Finchirp   **Remote**

Backend Software Developer   *Aug 2025 - Present*

- Architected real-time financial data integration system integrating **multiple third-party APIs** with caching layer and RESTful endpoints, enabling platform to deliver live market data to users **at scale** using Agile methodologies.
- Developed proprietary **multi-factor scoring algorithm** combining weighted data from multiple sources to identify market trends, with optimized query performance through **intelligent caching strategies**.
- Delivered full-stack features across **3,000+ LOC** in **2-week sprint cycles**, integrating multiple external APIs, designing database schemas, and managing migrations using Jira for project tracking and coordination.

University of Alabama at Birmingham   **Birmingham, Alabama**

Computer Science Teaching Assistant   *Aug 2022 - May 2025*

- Assisted in teaching **Data Structure and Algorithms** in Python and Java and **Systems Programming** in C.
- Provided feedback on **more than 400 assignments** each semester, maintaining less than **72 hour** turnaround time.
- Mentored students in core programming concepts, guided them through assignment completion, and delivered **in-depth code feedback** to accelerate skill development.

Maven Wave Partners   **Chicago, Illinois**

Infrastructure Intern   *Jun 2023 - Aug 2023*

- Authored comprehensive training documentation on **YAML/Terraform** and created interactive demos for cloud technologies, accelerating new employee onboarding and adoption of **Infrastructure as Code** practices.

Infrastructure Intern   *Jun 2022 - Aug 2022*

- Refined Terraform configurations to finalize a **scalable GCP environment** and streamlined deployment documentation to maintain consistent infrastructure management across the organization.

Infrastructure Intern   *Jun 2021 - Aug 2021*

- Engineered a secure data-sharing **microservice using Kubernetes**, enabling seamless data exchange between provider and third-party companies within a progressive GCP implementation.

EDUCATION

University of Alabama at Birmingham   **Birmingham, Alabama**

B.S in Computer Science   *Graduation Date: Apr 2024*
M.S in Computer Science   *Graduation Date: May 2025*

PROJECTS

Portfolio RAG Chatbot | FastAPI, ChromaDB, Redis, PostgreSQL, Groq API

- Deployed **production retrieval system** with **JWT/Redis session management**, engineering a **negative inference detection** system to reduce hallucinations by reformulating queries about non-existent entities.
- Optimized performance via **hybrid semantic-lexical reranking** and **response caching**, achieving **100% success rate** and **2.12s mean latency** (7.8x improvement) under **25-request concurrent load**.

GPT-Style Transformer | PyTorch, Flash Attention, DDP, WikiText-103

- Implemented **152M-parameter transformer** with **Flash Attention, FP16, and DDP**, scaling architecture to **1B parameters** with **SwiGLU activations** for **public HuggingFace deployment.**
- Engineered **custom BPE tokenizer** (25k vocab) and training pipeline with **gradient checkpointing** to optimize memory utilization and enable **real-time TensorBoard monitoring**.

CERTIFICATIONS & SKILLS

Certifications: Certified Kubernetes Administrator, AWS Certified Cloud Practitioner, AWS Certified AI Practitioner

Skills: Python, JavaScript, C, Java, FastAPI, PyTorch, Redis, PostgreSQL, ChromaDB, MongoDB, Docker, Kubernetes, Terraform, GCP, AWS, Git