Raghavsai Tirupati

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Education

Texas A&M University **Expected Grad. May 2028**
B.S. in Computer Science and Bioinformatics | Minor in Business GPA: 4.0/4.0

Experience

ClinicalHours (clinicalhours.org) **Oct 2025 – Present**
Founder Austin, TX

- Operating a production AI healthcare workforce platform serving **1,000+ users** across **9,500+ facilities**, built on **Next.js, TypeScript, Supabase/Postgres** with row-level security.
- Built Python ingestion pipelines to scrape, normalize, deduplicate, and geocode **9,500+ healthcare facilities**, powering radius-based search over **Postgres** latitude/longitude data.
- Running production AI workflows on the **Anthropic Claude API** for clinic Kanban inbox summarization, applicant screening, and AMCAS activity writing, with structured prompt engineering and JSON-formatted response parsing.

Texas A&M Department of Nutrition – Suzuki Lab **Jan 2026 – Apr 2026**
Research Data Engineer College Station, TX

- Built reproducible **R data pipelines** (**tidyverse, dplyr**) to ingest, normalize, and analyze **transcriptomic and metabolomics datasets** of **250+ samples**, replacing manual workflows with versioned, parameterized scripts.
- Engineered automated **statistical modeling pipelines** (multivariable regression, dimensionality reduction) processing **multi-cohort biological data**, reducing analysis time from **multi-hour manual runs to under 5 minutes**.
- Designed **ggplot2** visualization workflows for **differential expression analysis** and cross-dataset reporting, producing publication-ready figures for the lab's **NIH-funded** research on Developmental Origins of Health and Disease.

Texas A&M Department of Biochemistry – Cho Lab **Jan 2026 – Apr 2026**
Undergraduate Researcher College Station, TX

- Wrote **Python** scripts to automate quantification and analysis of protein interaction assay data, reducing manual processing time across western blot and co-immunoprecipitation experiments.
- Built **data processing workflows** that converted raw wet-lab outputs into structured datasets, supporting downstream analysis of binding partners and interaction networks for SARS-CoV-2 and influenza immune evasion research.
- Contributed to therapeutic target identification by structuring and analyzing experimental datasets under PhD researcher direction, bridging wet-lab outputs with computational pipelines.

Projects

Iris – 1st Place @ Hook 'Em Hacks | *TypeScript*, *React*, *Swift* **iris.how** | **App Store**

- Built an AI assistant for the visually impaired, implementing a tap-to-capture pipeline using LLM models for multimodal analysis with real-time scene understanding and situational feedback.
- Integrated LLM voice agents for real-time voice synthesis on a web-based platform, delivering spoken descriptions in under 4 seconds across all devices; now live on the App Store.

Harbor – Best use of AI @ TidalHack | *TypeScript*, *React*, *PostgreSQL* **harbor.xyz**

- Developed an AI platform to interpret and organize natural disaster data to predict future hazards, winning 1st Place for Best Use of AI among 500+ participants at TidalHack.
- Architected a multi-source data ingestion pipeline and visualization layer, coordinating technical direction across the team to ship a functional intelligence system.

OpenAI Model Craft: Parameter Golf | *PyTorch*, *Quantization (STE)*

- Trained a parameter-constrained LLM under a 16MB artifact limit and 10-minute 8xH100 compute limit, implementing int6 quantization-aware training (STE) and sliding window evaluation.
- Optimized training via custom learning rate scheduling and gradient accumulation, achieving competitive perplexity scores under extreme compute and parameter constraints.

Technical Skills

Programming Languages: Python, JavaScript, Java, TypeScript, TailwindCSS, PHP, SQL, C++
Frameworks & Libraries: React, Next.js, Node.js, Express.js, Flask, FastAPI
Tools & Technologies: Git, Docker, AWS, Vercel, Heroku, MySQL, SQLite, MongoDB, Jest, REST API
Concepts: Backend/Frontend Development, Fullstack Development, Software Engineering, Microservices, Cloud Services, Machine Learning, Networking, Security Analysis, Scripting, Automation, Agile