

LAVNEET HORA

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Education

Texas Tech University

Expected Graduation: May 2027

Bachelor of Science in Computer Science (Honors), Minor in Math and Bioengineering

GPA: 3.94

- Awards: 4x President's Honor List, IEEE Computer Society Career Catalyst Scholar
- Leadership & Activities: Officer @ Google Developers Group, Hacker Experience Lead @ HackWesTX 2025

Experience

UTHealth Houston, BIG-TCR Program

June 2026 – August 2026

Research Intern

Houston, TX

- Built an R/Seurat + AUCell single-cell RNA-seq pipeline across 7 cancer datasets that scores 900,000+ cells for neural-pathway activity and clusters them into three subtypes.
- Extended analysis to spatial transcriptomics across 3 datasets, implementing RCTD cell-type deconvolution and custom image registration to map neural activity onto real tumor tissue and correlate against clinical outcome data.

Texas Tech University, Dept. of Electrical and Computer Engineering

May 2025 – October 2025

Undergraduate Research Assistant

Lubbock, TX

- Performed Detrended Fluctuation Analysis (DFA) on mice actigraphy data in MATLAB to quantify movement fluctuation patterns across 17 subjects.
- Designed a data validity filtering strategy to handle missing values and isolate common valid days across all subjects, ensuring consistent input for Hurst exponent calculations.
- Contributed to a DFA/MFDFA analysis of a 38-patient sleep study, correlating movement-derived Hurst exponents with anxiety, depression, and sleepiness survey scores.

iMocha

July 2025 – August 2025

GenAI Intern

Remote

- Built an automated issue-resolution pipeline using Python and n8n, integrating Gemini API to summarize candidate reported feedback, extract key issues, and generate structured, prioritized QA reports for 500+ monthly assessments.
- Reduced QA triage time by 75% (12 to 3 min/report) and cut issue resolution time by 40% by eliminating manual review of 1,000+ raw feedback entries.

Projects

Ceremoni | Python, FastAPI, Celery, Redis, OpenAI GPT-Audio, Azure TTS, Docker

Demo

- Built an AI system that lets graduating students record their own name pronunciation, using OpenAI to extract IPA phonetic transcription from the recording and Azure TTS to generate ceremony-quality audio, ensuring every name is announced correctly regardless of cultural origin.
- Engineered an async backend with FastAPI and Celery/Redis to process audio in the background, integrated Microsoft Graph API for OneDrive-based data collection, and containerized the system with Docker for deployment.

RaiderRating | TypeScript, React, Plasmio, Express, Node.js, Express, Python, Railway

Demo

- Built a Chrome extension that overlays Rate My Professors ratings and Grade Distribution directly inside TTU's Schedule Builder, eliminating tab-switching during registration - reaching 200+ installs and a 5.0/5.0 rating on the Chrome Web Store.
- Engineered a full-stack system with a React/Plasmio frontend and a Node/Express API on Railway, integrating the RMP GraphQL API with a self-scraped dataset of 4,890 professor-course grade records using in-memory caching for sub-millisecond lookups.

Football Kick Analyzer | Rubik Pi 3, Python, YOLOv8, OpenCV, MediaPipe

Demo

- Built a real-time computer vision system to track football trajectories and analyze kick accuracy on embedded hardware, training a custom YOLOv8 model on a self-collected dataset of 3,000+ images to achieve 20-35ms inference latency on Rubik Pi 3.
- Implemented Kalman filtering and spline interpolation for smooth trajectory reconstruction, then presented the system to Qualcomm engineers during an IEEE Career Catalyst headquarters visit.

Technical Skills

Languages: Python, Java, C++, C, SQL, MATLAB, JavaScript, R

Frameworks & Libraries: React, PyTorch, OpenCV, TensorFlow, Next.js, Node.js, FastAPI, Tailwind CSS, Pandas, NumPy, Qiskit, Selenium

Tools & Platforms: Git, Docker, Firebase, Supabase, Jupyter, VS Code, Google Cloud, Linux