Hrishikesh Naveenam

hrishinave@gmail.com / +1 (469)-586-6902

EDUCATION

The University of Texas at Dallas — *Dallas, TX* **GPA: 3.72**
B.S. in Computer Science, Minor in Mathematics *May 2028*

RESEARCH EXPERIENCE

Research Assistant at Univ. of Missouri — *Remote* *Sept 2024 - May 2025*

- Contributed to research on confidential computing approaches for **ML/DL-based scientific workflows** on Volunteer Edge-Cloud resources, exploring privacy-preserving execution methods
- Assisted in testbed deployment and experimentation using **OpenFaaS** and **MicroK8S** frameworks on cloud platforms for bioinformatics and health informatics applications
- Setup a testbed on AWS EC2 and finetuned the **Evo2** and **BioMistral7B** Bioinformatics models

Student Researcher at UT Dallas — *Dallas, TX* *Feb 2025 - May 2025*

- Improved anomaly detection by developing **DCGAN architecture** for synthetic astronomical images, achieving **0.72 Recall** and **0.85 ROC-AUC** on Galaxy10 dataset (poster)
- Fine-tuned **StyleGAN** pre-trained weights to generate high-fidelity astronomical images with **0.81 ROC-AUC**, enhancing model generalization on rare celestial events
- Boosted rare-event detection performance by **15%** over baseline through strategic GAN-based data augmentation

Research Assistant at Univ. of Missouri — *Remote* *Sept 2023 - Jan 2024*

- Achieved **84% accuracy** in workflow placement by implementing **K-means clustering** algorithms to optimize volunteer edge node resource allocation based on CPU, RAM, and storage capacity metrics
- Architected **Docker-based AWS testbed** with multiple VM configurations simulating dynamic Volunteer Edge-Cloud environments, enabling scalable testing of resource allocation strategies across heterogeneous edge infrastructure
- Optimized cluster configuration using **Elbow Method** analysis, reducing computational overhead and improving resource allocation efficiency for scientific workflow execution

PROJECTS

AutoPM — *Next.js, LangGraph, Google Gemini* *November 2025*

- Built AI-powered PM automation platform orchestrating **8 specialized agents** via **LangGraph** for end-to-end workflows including ideation, user stories, RICE prioritization, OKR alignment, and wireframe generation
- Engineered type-safe agent communication using **Zod-validated** structured outputs, ensuring consistent data flow across idea generation, market research, and **Jira ticket creation** with **Gmail API** integration
- Developed **Next.js** full-stack application with **MongoDB** state management, **Auth0** authentication, and context-aware AI assistant leveraging **Gemini 2.0 Flash** for real-time PM decision support

EduTube — *Google Cloud, React, TypeScript* *September 2025*

- Built an AI-powered lecture companion integrating **TwelveLabs API** for semantic video search and **Gemini API** for auto-generated study materials, processing **100+ educational videos**
- Engineered **Fastify backend** with RESTful endpoints and **Google Cloud Storage**, implementing webhook-based real-time video processing with **95% uptime**
- Delivered responsive **React + Vite frontend** with **Framer Motion** animations, organized as type-safe monorepo architecture

UTD Spots — *Swift* *May 2025*

- Developed iOS app enabling **100+ students** to discover campus study locations with amenity filtering and distance-based recommendations using **Core Location**
- Implemented **MVVM architecture** with clean separation of UI, business logic, and service layers for maintainable, testable codebase
- Integrated **MapKit** for interactive campus visualization with location-aware spot discovery and turn-by-turn navigation

NetGainNBA — *Python, SQL* *February 2025 - May 2025*

- Collaborated in developing an interactive NBA Playoff simulator, enabling users to generate complete playoff brackets for any NBA team and season from 1995 to 2024
- Conducted data cleaning and preprocessing in Python on extensive team and player datasets retrieved from the official NBA API
- Built and optimized predictive classification and regression models using **TabNet** for enhanced accuracy in analyzing

tabular data

LEADERSHIP AND INVOLVEMENT

AI51 Innovation Labs — *Lead Developer* *August 2025 - Present*

- Leading development of **Research Mate**, an AI-powered research paper copilot featuring section-wise summarization, citation-aware explanations with source attribution, and interactive citation graph visualization
- Architected fine-tuned paper-specific models with adaptive explanation levels (professor/student/child), user profile-based recommendations, and cross-domain paper discovery using semantic similarity
- Built collaborative research environment with author analytics, FAQ autocomplete from usage patterns, hub-based communities, and expert matchmaking connecting researchers across experience levels

Artificial Intelligence Society (AIS) — *Officer* *May 2025 - Present*

- Organizing **HackAI**, UTD's premier annual AI hackathon, managing event logistics, corporate sponsorships, and technical challenges for hundreds of participants
- Facilitating technical workshops and community initiatives to promote AI literacy and hands-on project development within the student body

AI Mentorship Program (AIM) — *Project Manager* *August 2025 - Present*

- Mentoring a group of 5 students on **TuneTrend**, a music analytics project extracting audio features (MFCCs, tempo, rhythm, spectral characteristics) using **Librosa** to predict song virality and chart performance
- Guiding implementation of **K-means clustering** for feature grouping and **linear regression** models correlating acoustic patterns with commercial success metrics

HONORS AND AWARDS

2nd Place, PNC Track - HackUTD 2025 *November 2025*

Deans List - Fall 2024

TECHNICAL SKILLS

Programming Languages: Python, C++, Swift, Java, JavaScript, TypeScript
Libraries and Frameworks: Flask, Spring Boot, PyTorch, REST, React, Next.js, LangChain