

Manthra Natarajan

214-931-6797 | [Email](#) | [Website](#) | [LinkedIn](#) | [GitHub](#)

EDUCATION

The University of Texas at Dallas

Bachelor of Science in Computer Science, GPA: 3.7, AES Scholar

Aug. 2023 – May 2026

Richardson, TX

PROJECTS

<u>LeaseEase</u> Vite, TS, TailwindCSS, ReactJS, NodeJS, Express, Supabase, ElevenLabs, ThreeJS, Vercel	Nov 2025
<ul style="list-style-type: none">Engineered a web app where users voice lifestyle/budget preferences and receive tailored vehicle recommendationsImplemented vehicle spec comparison, a realistic monthly payment calculator, a dealership locator, and 3-D viewsIntegrated realistic text-to-speech synthesis and voice interaction to make it accessible—runner up at HackUTD Toyota Challenge	
<u>ExpressifAI</u> Python, OpenCV, PyTorch, Gradio, google-Gemini API	Feb 2025 – April 2025
<ul style="list-style-type: none">Developed a webcam application to detect facial emotions and actions using DenseNet-161 and SlowFast-r50Integrated a semantic generation pipeline using Gemini API to translate detections into human descriptionsImplemented Gradio for an interactive UI, allowing real-time emotion and action analysis with high accuracy	
<u>FinanceFlow</u> JS, next-auth, Next.js, NodeJS, Pinata, ReactJS, shadcn/ui, TS	Nov 2024
<ul style="list-style-type: none">Built a financial dashboard with React and TypeScript, using Pinata for secure data storageDisplayed real-time trending stock patterns and integrated a chatbot using OpenAI and shadcn/uiImplemented a feature that embeds articles on fintech and added a next-auth system to enhance reliability	
<u>GuardAI</u> Python, JS, React, CSS, Prolog, C, PowerShell	Jan 2025
<ul style="list-style-type: none">Developed a message analysis system utilizing NLP to detect harmful messages, enhancing safetyImplemented sCASP to perform non-monotonic reasoning to detect harmful text, leveraging Prolog-based constraint logic programming to infer implicit threats and toxicity detectionPracticed modular architecture with separate backend and frontend components, increasing scalability	

EXPERIENCE

Software Developer Intern

June 2025 — Aug 2025

Irving, TX

Citi | Kotlin, XML, Android Studio, Gson

- Developed a stand-alone dynamic tile rendering system in **Kotlin** for Citi's **Android** app using a **RecyclerView**, **ViewHolders**, and JSON-driven (pulled from **logcat**) parsing using **Gson**.
- Integrated all FICO tile variations with custom builtin **POJO classes**, resolved rendering issues, ensured **CDS design compliance**, and designed it for seamless integration of future tiles.
- Debugged and rendered advanced UI elements like **CDSGauge**, leveraging **constraint layouts**, **view invalidation**, and **layout inspector tools** for **30+** feature teams to preview tile history and boost customer engagement.

Software Developer Intern

May 2025

CVS Health | Vertex AI, Google Cloud Platform, Google Gemini, BigQuery, SQL, NumPy, Python

Irving, TX

- Developed a drug name matching system using **VertexAI text embeddings/row** and **cosine similarity** to identify matches between inconsistent drug records, increasing productivity to 66% given a single dataset.
- Utilized **SQL queries** in **Google Cloud Platform** to format data to prepare for the AI text embeddings.
- Implemented a similarity score system using **NumPy cosine_sim** and a defined threshold of 0.8 to reduce false positives in **BigQuery** master table updates.

Undergraduate Teaching Assistant

Dec 2024 — Present

Remote

CodePath

- Guided groups of 5-6 students through solving LeetCode challenges and DSA with Python and Java
- Assisted students 4hrs/week with Technical Interview Prep for beginners during my office hours
- Collaborated closely with CodePath staff to support and improve the student learning experience

TECHNICAL SKILLS

Languages: Java, Python, C, C++, MySQL, JavaScript, TypeScript, HTML, CSS, Kotlin, Assembly, Bash

Frameworks: Node.js, Flask, MongoDB, Pinata, Material-UI, .NET, Next.js, Junit

Developer Tools: AWS, Git, Docker, Google Collab, VS Code, Eclipse, MobaXTerm, Figma, Jira, Jupyter, VertexAI

Libraries: Pandas, NumPy, Matplotlib, sci-kit-learn, OpenCV, TensorFlow, PyTorch, shadcn