Ethan Varghese

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EDUCATION

Bachelor of Science in Computer Science   August 2023 - May 2026
University of Texas at Dallas   Richardson, Tx
Coursework: Data Structures and Algorithms, Object Oriented Programming
GPA: *3.87*

SKILLS

Languages/Frameworks/Libraries
Java, C++, Python, HTML, CSS, Javascript, React, Next.js, Typescript, Tailwind, LangChain

Tools/Databases
AWS S3, AWS DynamoDB, AWS Lambda, AWS Textract, ChromaDB, Pinecone, Claude 3, BeautifulSoup4

PROJECTS

SAGE | *AWS S3, AWS DynamoDB, AWS Lambda, AWS Textract, React, Python, Pinecone, LangChain*

- Full-Stack web application in a team of 4 featuring an AI Chatbot model that communicates as a UT Dallas advisor to answer questions, generate a degree plan, and give students academic and career advice
- Created a **RAG Pipeline** using the **LangChain** framework and Claude3's **Haiku model**
- Implemented a dynamic vector database using **Pinecone**, that grows as the chatbot learns from new queries, allowing the bot to improve in speed and accuracy over time
- Extracted student data from transcripts using **AWS Textract**, stored the student information into **AWS DynamoDB**, and generated a degree plan based off of their remaining course requirements
- Built **serverless REST APIs** using **AWS Lambda** and **Python**

SlideScribe | *Javascript, Google Cloud Vision, Python, Flask, HTML, CSS*

- Full-Stack web application that serves as an AI powered homework helper that aids students in their lecture comprehension.
- Utilizes **Google Cloud Vision** API as an OCR Engine for transcribing text from uploaded images of lecture slides.
- Users can have the text read out loud with synchronized text-to-speech and have a summarized text file generated containing notes over each uploaded slide.

REDBOX Inventory Management System | *C++*

- Implemented a system for managing a large inventory of DVD objects using a binary search tree
- All transactions are recorded to a log, which updates the tree accordingly as users create, delete, or modify the DVD objects at each node
- Enabled batch operations, allowing users to carry out multiple operations on the tree simultaneously

ORGANIZATIONS

UTD SAE - UTD Society of Automotive Engineers - *Software Team, Frontend Developer*
ACM - Association for Computing Machinery - *ACM Projects Participant, Backend Developer*
UTD AWS - UTD Amazon Web Services Community
AIS - Artificial Intelligence Society
KTP - Kappa Theta Pi, *Professional CS-focused fraternity*