Shantanu Shinde

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EDUCATION

University of Texas at Dallas, Richardson, TX, United States   Expected: May 2026
Master of Science, Computer Science   **GPA 3.78**
- Dean's Scholarship
- Coursework: Database Design, Machine Learning, Statistical Methods for Data Science, Big Data Management and Analytics, Natural Language Processing, Design and Analysis of Algorithms

Indian Institute of Information Technology, Nagpur, MH, India   June 2021
Bachelor of Technology, Computer Science and Engineering   **GPA 3.75**
- Relevant Coursework: Neural Networks and Deep Learning, Database Management Systems, Artificial Intelligence, Soft Computing, Design and Analysis of Algorithms, Numerical Methods and Probability Theory

TECHNICAL SKILLS

Programming Languages: C++, Python, C#, Java, Javascript
Tools & **Frameworks**: Lang Chain, Kubernetes, Apache Spark, .NET, Azure Dev Ops, pytorch, tensorflow, Unreal Engine, Unity3D, Springboot, git, gRPC, REACT, MySQL, MongoDB
Certifications: Deep Learning Specialization, Advanced Data Science Specialization, Reinforcement Learning Specialization

WORK EXPERIENCE

University of Texas at Dallas, Richardson, TX, US   September 2024 – Present
CS Outreach Instructor
- Helping to conduct coding workshops and events for school students.
- Acting as an instructor to present and teach workshop materials and resolve doubts.

NI (National Instruments) (Emerson), Bangalore, India   January 2021 – June 2024
Software Engineering Intern, Software Engineer, Staff Software Engineer
- Developed a prototype chatbot for NI Customer Support using GPT-3, Python, Prompt-Engineering, chatbot web interface using NodeJS.
- Worked on a Similar Yammer post detector that searched for the most similar yammer post using BERT vector outputs and cosine similarity. Integrated that into a Yammer group using Power Automate, gRPC, Azure Function App and Azure Container Instance.
- Helped with development of gRPC API wrappers for NI Device Driver APIs using Python, C++, LabVIEW and wrote automated tests for it using gtest.
- Implemented web service for LabVIEW web interface using C++.
- Worked on developing Hardware Configuration Utility using .NET Core.
- Implemented Hardware Licensing Activation API using Java, Springboot, Kubernetes, Micro Service architecture, Maven and Azure Pipeline for deployment, MuleSoft for proxy API.
- Updated NI Volume License Manager to use SQLite database in place of SQL CE database using C# .NET, SQLite, SQLite encryption library and wrote automated testing for it using XUnit and Moq.

International Institute of Information Technology, Hyderabad, India   May 2019 – August 2019
Summer Intern
- Developed 3D simulation web application using JavaScript 3D library.
- Implemented Image Processing and Computer Vision web application using Python, OpenCV, Flask.
- Received a letter of commendation for good performance.

ACADEMIC & PERSONAL PROJECTS

CourseCOMET – Course & Professor related QnA bot, University of Texas at Dallas   January 2025 – May 2025
Tools Used: Python, langgraph, MySQL, REACT, NodeJS, Flask
- Fetched data using the UTD Trends APIs into csv and preprocessed it.
- Data engineered schema for the SQL database and converted the CSVs into MySQL tables.
- Used LangGraph and GPT-4 to convert text into SQL queries.
- Ran the query on the database and used GPT-4 to convert the result into a natural language answer to the question asked by the user.
- Prompt engineered Text-SQL model to give relevant queries by passing database description.
- Passed system prompt to SQL result-natural language model to return the text is proper formal, with HTML lists and tables wherever necessary.
- Built a front end using REACT and NodeJS to have a chatbot chat UI and render the responses.
- Tested the bot to find corner cases and to ensure it gives correct information, can keep the memory and context of the conversation, is able to compare different professors, courses, gradings.

Sign-opsis – Voice to ASL converter, HackAI 2025, University of Texas at Dallas   April 2025
Tools Used: Python, langgraph, Google MediaPipe, REACT, NodeJS, OpenCV, spacy, flask
- Developed a frontend using REACT and NodeJS for login and uploading voice recordings
- Used Flask server to expose an API to receive the voice recording file from the front end.
- Utilized OpenAI Whisper model to convert the voice recording into text.
- Converted text into ASL gloss tokens using spacy
- Developed program to use videos from ASL citizen and WLASL datasets to get coordinates of hand and fingers when performing ASL using Google MediaPipe.
- Created mapping of ASL Gloss keywords and letters to sequence of hand coordinates.
- Programmed a OpenCV application that renders the coordinates as circles and lines to resemble hand and fingers.

Natural Speech to SQL query converter, University of Texas at Dallas   August 2024 – December 2024
Tools Used: Python, hugginface, pinecode RAG, git, openai
- Developed a workflow for converting natural language speech instructions into SQL queries.
- Used Wave2Vec to convert speech to text.
- Created vectorized embeddings of spider dataset schemas and created a vector search for them using pinecone framework to work as RAG.
- Utilizing the created RAG to fetch the appropriate schema based on the input text.
- Made use of Open AI GPT-4 to convert the text into SQL query with the added context of the schema.

Customer Support Bot,   January 2023 – June 2023
NI (National Instruments) (Emerson)
Tools Used: Python, OpenAI, NodeJS, React, Flask
- Used OpenAI library and GPT-3 model to answer customer support related questions regarding the company.
- Utilized Prompt Engineering to answer questions that are only related to company and also give answers so that they relate to the company and reference company products.
- Made use of one-shot learning to have the outputs in proper html format with proper table tags and list tags.
- Created a chatbot UI interface using NodeJS and React.
- Integrated the UI with the backend using Flask server.

HONORS & AWARDS
Top presentation at NI Tech 2022, NI (National Instruments), Bangalore   June 2022
Rookie of the Year, NI Global R&D Excellence Awards 2022, NI (National Instruments), Bangalore   November 2022
First position in competitive coding competition, Indian Institute of Information Technology, Nagpur   March 2019