

DARSHAN BABU SHRESTHA

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Education

University of Texas at Arlington

Current – Dec 2026

Bachelor in Computer Science, Minor in Data Science (Junior)

Arlington, TX

GPA: 4.0 Dean's List - 2025 Spring (1 of 546 among 6000 Undergraduate Student)

Ullens IB World School

Aug. 2020 – May 2022

International Baccalaureate Diploma Program

Lalitpur, Nepal

Technical Skills

Languages: Python, Java, SQL, HTML/CSS, JavaScript

AI/ML Tools & Libraries: Scikit-learn, XGBoost, TensorFlow, Pandas, NumPy, Streamlit, OpenCV

Automation & Infrastructure: Git/GitHub, CI/CD Pipelines, Automation Scripting, API Integration, Cloud Deployment, Linux/UNIX, WordPress

Data & Analysis: Data Preprocessing, Feature Engineering, Data Visualization, Exploratory Data Analysis (EDA), Model Evaluation, SQL Querying

Software Engineering Concepts: Object-Oriented Programming (OOP), RESTful APIs, Agile Development, Full-Stack Development, System Design, Regression Testing, Version Control (Git)

Responsible AI: AI Ethics, Bias Mitigation, Human-Centered Design, Model Interpretability, Inclusive AI Practices

Experience

JPMorgan Chase & Co. Software Engineering Virtual Experience

Aug 2025

Forage Online Simulation — Remote

- Completed a multi-step simulation focused on **transaction processing**, **data analysis**, and **real-time financial insights**.
- Developed and deployed a **Spring Boot microservice** to retrieve **user account balances** via REST API using **Java** and **Maven**.
- Integrated with **Kafka** to stream transaction recommendations, ensuring **scalability** and **low-latency** message processing.
- Debugged and resolved **application context loading issues** by configuring **application properties** and dependency injection.
- Validated functionality through **JUnit tests**, ensuring accurate API responses and consistent balance calculations.

Web Developer Intern – TLT (Tomorrow's Leaders Today)

May 2025 – Current

Remote

- Developing and maintaining the company's website using **WordPress**, **HTML/CSS**, **JavaScript**, **React**, and backend APIs with **FastAPI/Flask**.
- Implementing **security best practices**, focusing on authentication, data protection, and vulnerability mitigation.
- Collaborating with mentors to enhance **website accessibility and user experience**, leveraging **automation tools** to optimize workflows.
- Working with **CI/CD pipelines** and cloud deployment solutions to ensure scalable and maintainable web infrastructure.

AI4ALL Machine Learning Fellow

May 2025 – Current

AI Fellowship Program for Social Good — Remote

- Selected as 1 of 50 fellows nationwide to develop **responsible, ethical, and inclusive AI/ML solutions** addressing real-world challenges.
- Built a machine learning pipeline using **Random Forest** and **XGBoost** to predict **country-level energy consumption** with **97.6% accuracy (R^2)**.
- Performed **feature engineering**, **hyperparameter tuning**, and **bias analysis**, reducing **MAE by 7.4%** and **MSE by 25.5%**.
- Developed an interactive **Streamlit web app** for real-time **visualization**, **prediction**, and stakeholder communication.
- Received mentorship in **AI ethics**, **bias mitigation**, and **human-centered design**, applying these principles throughout the development cycle.

Arlington, TX (Remote/On-Campus)

- Selected by Adobe to represent and promote **Adobe Express and Creative Cloud** tools on campus through workshops, peer sessions, and community events.
- Organized creative design sessions and led hands-on tutorials to help students build personal brands, portfolios, and academic projects using Adobe tools.
- Collaborated with Adobe mentors and student leaders to foster a campus-wide culture of visual storytelling, design thinking, and digital creativity.
- Created and shared engaging content on social media to showcase student work and promote Adobe resources, reaching a growing creative community at UTA.

Projects

GeminiEye - AI Navigation for Visually Impaired People — Python, FastAPI, Google TTS, OpenCV, Gemini API **March 2025**

- Hack Day UTA Winner 2025 — Best Use of Gemini API
- Built a real-time AI assistant that uses voice, vision, and text to aid navigation for the visually impaired
- Integrated Google Gemini API, Google TTS, and OpenCV for intelligent voice feedback

Energy Consumption Forecasting and Environmental Impact Analysis — Python, Pandas, Scikit-learn, Matplotlib **July 2025**

- Built a machine learning pipeline to predict future energy consumption and identify high-impact regions for environmental intervention
- Performed data cleaning, feature engineering, linear interpolation, and imputation on global sustainable energy dataset
- Used Random Forest and Gradient Boosting algorithms to model energy usage and CO₂ emissions per capita
- Visualized global energy trends using Plotly, created interactive choropleth maps, and analyzed feature importance

Real-Time Transaction Analytics Simulation — Java, Spring Boot, Kafka, Maven **Aug 2025**

- Completed JPMorgan Chase Forge simulation building a real-time transaction processing system with Spring Boot and Apache Kafka.
- Developed REST APIs to retrieve user account balances and send transaction recommendations to Kafka topics.
- Integrated with a mock transaction database, enabling live data retrieval and processing for analytical insights.
- Configured Maven and Spring Boot to run locally on custom ports for testing, debugging, and API validation.

AI-Powered Slide-to-Lecture Audio System — Python, FastAPI, React, Google TTS, Gemini API **Feb 2025**

- Built software to convert PDF/PPT slides into lecture videos with AI narration, AI Professor Chat-Bot, and AI Quiz Section
- Implemented backend logic in FastAPI to extract and process text from uploaded files
- Created frontend in React with dynamic PDF viewer, audio playback, and chatbot integration
- Used Google TTS for natural-sounding audio generation and synchronized it with slide visuals

Customer Churn Prediction System — Python, Flask, Streamlit, scikit-learn **June 2025**

- Developed a machine learning system to predict customer churn based on behavioral and demographic data
- Built and trained models in Jupyter Notebook using scikit-learn, achieving high prediction accuracy
- Created a Flask backend API to serve the trained model for real-time churn predictions
- Designed an interactive Streamlit frontend to input customer details and display prediction results

AI-Powered Recipe Generator — Python, FastAPI, React, Google TTS, Gemini API **Feb 2025**

- Built software to scan Fridge and generate Recipe with steps to make the Recipe that can be made from the items inside the fridge.
- Implemented backend logic in FastAPI to extract and process picture
- Created frontend in React to show list of recipe including steps to make them

Stock Management System — SQL, Java, NetBeans **Nov 2022**

- Developed inventory system for tracking stock levels and transactions with a GUI interface

- Developed full secure Login and Sign-up page
- Developed a Data-base to store all the data
- Created 2 different user experience for company CEO and General Stake holder

QuizAI - AI-Powered Quiz Generator — Python, FastAPI, Gemini API

April 2025

- Created a system to extract text from lecture slides and generate intelligent quizzes automatically using Gemini API
- Built backend with FastAPI and integrated Gemini Flash for contextual question generation

Accomplishments

- Won Best Use of Gemini API at Hack Day UTA 2025 for building GeminEye, an AI-powered navigation system for the visually impaired
- Maintained a 4.0 GPA while balancing academic, internship, and personal development projects
- Earned 6+ professional certifications including: Google Crash Course on Python, IBM Python for Data Science, UC Davis SQL for Data Science, Debugging C Code, Git with VS Code, and Python Data Structures by the University of Michigan

Extracurricular

- Hack Day 2025 Winner – Best Use of Gemini API
- inSTEM @ UTA – Active Member
- Phi Theta Kappa – Active Member