

Akshita Santra

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EDUCATION

The University of Texas at Austin, Austin, TX

May 2028

Bachelor of Science in Computer Science, Minor in Business, Minor in Robotics

GPA: 3.83

- **Relevant Coursework:** Data Structures & Algorithms, Operating Systems, Linear Algebra, Computer Architecture

SKILLS

Programming Languages: Java, C++, Python, C, JavaScript, TypeScript, C#, ASM, HTML/CSS, MATLAB, R, Swift

AI/ML: TensorFlow, OpenAI API, Pandas, NumPy, scikit-learn, PyTorch, torchvision, OpenCV, Matplotlib

Misc: Scikit-learn, Github, AWS, React, Vite, Node.js, REST APIs, Express, Prisma, PostgreSQL, WebSockets, Docker, MongoDB, Figma

Certifications: Oracle Certified Associate - Java SE 8 Programmer (*Issued May 2024*)

EXPERIENCE

Aramco Americas, *Software Engineering Intern*, Houston, TX

May 2025 - August 2025

- Programmed two robots that collect oil well data to enhance field safety and support more sustainable resource extraction, by developing modular C++ firmware for 20+ hardware components including motors.
- Developed Python-based UI/UX for both robots with BLE connectivity and multithreaded state workflows, leveraging NumPy/Pandas for data processing and Matplotlib dashboards for sensor visualization.
- Enabled reliable MATLAB/Arduino data exchange via Modbus Comms with zero packet loss.

NanoAssembly Lab, *Research Assistant*, Austin, TX

December 2024 - December 2025

- Systematized a 1D-CPNN machine learning framework for small-angle X-ray scattering (SAXS) analysis, reducing error rates by ~73%, helping to facilitate the design of more efficient drug-delivery nanoparticles.
- Developed and trained a deep learning model on 24,000+ simulated SAXS profiles in Python utilizing Tensorflow and Scikit-learn, achieving an $R^2=0.987$ and improving prediction accuracy by ~79% over baseline methods.
- Created a GUI and bundled executable with Python using tkinter, enabling researchers to run micelle structure predictions 10^3 - $10^6\times$ faster without coding expertise or specialized hardware.

Society of Women Engineers (SWE) - Visualizing Math, *Web Application Developer*, Austin, TX

August 2024 - May 2025

- Developed a full-stack educational website on Algebra and Geometry with quizzes and interactive graphing tools (HTML, CSS, JavaScript), with an average 30% improvement in quiz scores after interactive practice.
- Integrated Firebase Firestore in production and MongoDB + AWS in development, to track and retrieve user progress to deliver personalized learning paths.

Microsoft, *Blacks at Microsoft Apprenticeship Program*, Houston, TX

July 2023 - August 2023

- Gained proficiency in Python and taught daily classes to 20+ apprentices, strengthening team programming skills and fostering peer learning.
- Engineered a multithreaded Python server-client chat app, winning 1st place in the Houston Microsoft Python Competition.
- Directed a 1st-place hackathon team to build smart glasses that record visual experiences to aid dementia patients.

PROJECTS - Full Portfolio: <https://akshitasantra.github.io/>

Dayzy

December 2026

- Designed (Figma) and built a mutli-tab SwiftUI iOS app to log activities, visualize time usage, and generate summaries.
- Implemented a SQLite-backed persistence layer with custom SQL queries for real-time stats and activity recommendations.

Health IoT Dashboard

October 2025

- Developed a full-stack Healthcare IoT Dashboard with a responsive frontend (React + Vite) and robust backend (Node.js/Express + Prisma + PostgreSQL), enabling real-time patient telemetry with <1s latency via REST APIs + WebSockets.
- Automated build, containerization and deployment with Docker + Render, reducing setup time from 30 min to <3 min and ensuring consistent production environments.

LEADERSHIP & ACTIVITIES

Student Engineers Educating Kids, *Program Officer*, Austin, TX

January 2025 - Present

- Lead and run weekly STEM mentoring sessions for 25+ elementary students, ensuring an engaging learning environment.
- Serve as the primary point of contact for 15+ mentors, providing guidance, and resolving on-site issues.

FIRST Robotics Team, *Team Captain/Programming Lead*, Tomball, TX

August 2020 - May 2024

- Coded all functionality for the 2023 and 2024 robot in Java; consistent 22+ pts scored in autonomous period.
- Led the team in overcoming the crisis of losing 501c3 non-profit status and secured +15k in sponsorship donations.
- Raised \$2,500 to supplement limited budget and sourced materials by cold calling metal and polycarbonate suppliers. Secured enough parts to construct a robot that successfully competed at the World Championships.