Akshita Santra

(214) 600-4493 | akshitasantra@utexas.edu | linkedin.com/in/akshita-santra | github.com/akshitasantra

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
AI/ML: TensorFlow, OpenAI API, Pandas, NumPy, scikit-learn, PyTorch, torchvision, OpenCV, Matplotlib
Misc: Github, Kubernetes, Linux, AWS, React, Vite, Node.js, REST APIs, Express, Prisma, PostgreSQL, WebSockets, Docker, MongoDB
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.
- 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 - Present

- 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, 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× 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 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/

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.

Dynamic Memory Allocator — April 2025

- Designed and implemented a custom malloc()/free() in C with binned free lists, block splitting, and coalescing
- Ranked 14th/500+ on the course performance leaderboard, measured by utilization and throughput

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.