Arnav Surjan

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Education

The University of Texas at Austin GPA: 3.3/4.0
Bachelor of Science in Electrical and Computer Engineering, Minor in Entrepreneurship *Expected May 2026*

Work Experience

Software Engineering Intern Jun 2025 – Aug 2025
LightBeam.ai *San Jose, CA*

- Developed a full-stack application using Flask and React to securely manage and monitor Kubernetes clusters, integrating REST APIs, authentication flows, and real-time UI state persistence
- Designed and optimized database schemas and migrations with SQLAlchemy and Alembic, ensuring reliable storage of cluster metadata and resolving schema conflicts and unique constraint issues
- Implemented features for CSV-based cluster ingestion, automated SSH tunneling, and connection lifecycle management, improving reliability of remote connections by 65%

Software Engineering Intern Jun 2024 – Aug 2024
Bell Flight *Arlington, TX*

- Developed a multithreaded C# & XAML application to simultaneously display Operational Flight Program part numbers for 12 unique Flight Control Computer processors
- Composed a DXL script for cataloging requirements in Rational DOORS, automating the identification of missing links and reducing auditing time by 95%

RTI Summer Engineering Intern May 2023 – Aug 2023
Texas Department of Transportation *Austin, TX*

- Expedited the categorization of public university research documents by implementing a digital workflow using OnBase and Microsoft SharePoint, reducing processing time by 40%
- Streamlined the production of research project summaries through the strategic application of natural language processing techniques with generative AI, drastically increasing readability

Projects

Solar Vehicle Controls Software | *Longhorn Racing Solar* Aug 2022 – Present

- Engineered a Renode-based solar vehicle speed simulator to model motor controller performance using a PID controller in C
- Developed a C application to read and relay Prohelion motor controller status messages to the driver display, such as RPM and error codes
- Remodeled vehicle control state machine to optimize gear shifting, regenerative braking, and acceleration

Longhorn Network | *Software Design & Implementation II* Aug 2024 – Dec 2024

- Developed a back-end social network simulation in Java to model student interactions and referral paths
- Implemented core algorithms, including Gale-Shapley, Prim's, and Dijkstra's, to handle roommate assignments, pod formation, and referral pathfinding
- Engineered a multithreaded architecture to simulate concurrent real-time actions like friend requests & messaging

Save Simba | *UT Embedded Systems Game Design Competition – **3rd Place*** Jan 2023 – Apr 2023

- Developed game in embedded C on ARM-based TI microcontroller using interrupts, timers, DAC, ADC, etc.
- Created drivers for basic I/O, sprite animation, sound effects, etc.
- Designed game graphics and sprites using Procreate for iPad

Leadership & Activities

First-Year Interest Group Mentor | *The University of Texas at Austin* Aug 2023 – Present
Treasurer, Member | *IEEE Robotics and Automation Society* Aug 2022 – Present
Controls Software Developer | *Longhorn Racing Solar* Aug 2022 – Present

Technical Skills

Languages: Python, C/C++, Java, C#, JavaScript, SQL, DXL, Verilog, MATLAB
Frameworks: Flask, React, SQLAlchemy, Alembic, REST APIs, Material-UI, XAML, .NET
Tools: Git, Docker, Kubernetes, KiCad, Onshape, LaTeX