Sarthak Sarans

Austin, TX | sarthaksarans@utexas.edu | linkedin.com/in/sarthaksarans | github.com/sarthaksarans

Education

University of Texas at Austin — Austin, TX

Bachelor of Science in Electrical and Computer Engineering & Mathematics (Double Major) — *May 2027*

- **GPA:** 4.00
- **Relevant Coursework:** Data Structures, Digital Electronics, Design Process, Embedded Systems, Discrete Math
- **Activities:** Data Science Club, Coding Club, Blockchain Club, Cybersecurity Club
- **Transferred Universities:** Texas A&M University (Aug. 2023- May 2024)

Technical Skills

Languages: Python, C/C++, JavaScript, Java, Solidity, SQL, HTML/CSS, R, GoLang
Frameworks/Libraries: AWS, Scikit-learn, TensorFlow, Numpy, React, OpenGL, Flask, Jenkins, Docker, REST
Developer Tools: Git, Google Cloud Platform, Microsoft Office, VS Code, Visual Studio, PyCharm, Jupyter Notebooks

Experience

Software Engineering Intern — Jul. 2023 – Jan. 2024

Rialtes Technologies — *Austin, TX*

- Crafted innovative **Salesforce UI** through **Java** and planned the technical flow for a **$500K high-stakes project**
- Executed end-to-end **REST API testing**, including request & response validation, and data integrity handling
- Streamlined **CI/CD pipelines using Jenkins and Git**, resulting in a **10% increase** in code deployment efficiency
- Automated data extraction from multiple **SQL databases** and developed **dynamic Tableau reports** to streamline financial forecasting, **reducing reporting time by 20%**.

Undergraduate Research Assistant — Jan. 2024 – May 2024

Texas A&M University Urban Resilience AI Lab — *College Station, TX*

- Built **shell script** to retrieve 5 years of historical data, **processing 2M entries** using **Python and GeoPandas**
- Enhanced **deep forest** model predicting California wildfires using historical weather data, achieving **87% accuracy**
- Categorized data using **k-means clustering**, visualizing **750,000 data points** using **NumPy and Matplotlib**

Machine Learning Team Lead — Jan. 2024 – May 2024

General Motors x Data Science Club — *College Station, TX*

- Managed a **team of 4** to develop a **predictive model** to optimize electric vehicle charging stations
- Created locally-weighted **regression model** to predict energy load based on 8+ features with a **93% accuracy**
- Developed and maintained **project documentation**, regarding weekly progress and final presentation materials

Projects

Tetris PCB Design Project | *C, KiCad* — Nov. 2024 – Dec. 2024

- Developed a Tetris game in C on an ARM microcontroller, utilizing **interrupt service routines** to process user input and game logic at 30Hz.
- Reduced data transfer latency by 15% using **optimized SPI protocols**, ensuring smooth graphics and gameplay.
- Designed **graphics drivers** for a 160x128-pixel LCD and integrated a 12-bit DAC and a 11-bit ADC for efficient I/O.

Buck Converter | *KiCad* — Oct. 2024 – Nov. 2024

- Designed a buck converter to **step down voltage for low-power system**, achieving 92% efficiency under a 2A load
- Conducted **rigorous testing to validate** the converter's output voltage stability across a range of inputs (0 - 25V)

Helium | *JavaScript, Circom, Mocha JS, Git* — June 2023- July 2023

- Built a blockchain-based email security solution with automated key invalidation and time-based DKIM removal
- Integrated verifiable delay function to **automatically remove** Domain Keys Identified Mail after defined time
- Designed blockchain **smart contract** to enforce data rules, enhancing data integrity and access control

Sierpinski's Triangle | *C++, OpenGL, Git* — July 2023

- Created a fractal visualization tool in **OpenGL using recursive algorithms** to render Sierpinski's Triangle
- Achieved a 20% performance improvement by **optimizing GPU-bound processes** with shaders and VAOs.

Arithmetic Logic Unit (ALU) | *Python, Logisim 3.7* — Jan. 2023 – May 2023

- Architected a **16-bit ALU** in Logisim with a complete instruction set, assembler, and memory management
- Contains an IR decoder, **read/write control, overflow validation**, CLA adders, and hardware add/subtract
- Handles conditional logic and loops using conditional jump and efficient **pipeline management**