

Tyler Bowen

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EDUCATION

Texas Tech University, Lubbock, Texas

December 2025

Bachelor of Science in Computer Science, Minor in Math

GPA: 3.52

SKILLS & CERTIFICATIONS

Languages: Python, C++, C#, JavaScript, SQL, HTML, CSS, Verilog

Technologies: TCP/TLS Sockets, Binary Protocols, Docker, SQL Server, IIS Express, Multiprocessing, Fetch API

Frameworks and Libraries: React, NumPy, OpenGL, GLFW, Agile Methodologies

Certifications: IBM Full-Stack JavaScript Developer Professional Certificate, SAFe 6 Scrum Master, CodePath TIP

EXPERIENCE

Software Engineer - Lockheed Martin Space, Boulder, CO

February 2026 – Present

- Developed message functionality for a C++ network proxy service.
- Diagnosed and resolved a throughput bottleneck in a multithreaded C++ TCP data ingestion service.
- Automated user lifecycle checks in C#/NET using SQL Server and Active Directory

Lockheed Martin Space Intern, Boulder, CO

May 2025 – August 2025

- Reduced time to adjudicate software discrepancies by 50% in auditing software tool.
- Designed streamlined user interfaces on Ground Control team.
- Wrote hardware simulator for satellite communications device using TCP communication and state management.

C++ Developer - Solar System Simulation with OpenGL, Lubbock, TX

October - November 2024

- Implemented Keplerian orbital mechanics with elliptical orbits using Newton's method to approximate eccentric anomalies, resulting in accurate, real-time planetary motion.
- Utilized GLFW for user interactivity functions like zoom and pan, making it possible to explore the simulation.
- Architected the project using CMake for cross-platform builds and configuration management with efficient debug/release setup.

Bioinformatics Developer – Multiple DNA Sequence Aligner, Lubbock, TX

July 2024 - August 2024

- Developed a Multiple DNA Sequence Aligner written in Python using Needleman-Wunsch algorithm for pairwise alignment and the unweighted pair guide method with arithmetic-mean for guide tree construction.
- Wrote optimal global alignment algorithms with dynamic programming, leveraging BLOSUM and custom nucleotide matrices.
- Built a Progressive Alignment method for automating sequence-to-sequence and MSA alignments for large datasets.

PROJECTS

Python Cellular Automata Simulation with Multiprocessing, Lubbock, TX

November - December 2024

- Reduced runtime by 80% from 12 hours to 2 hours by leveraging multiprocessing to enable handling of large-scale 10,000x10,000 matrices in parallel.
- Enhanced matrix processing reliability with boundary management and verified correctness across parallel chunks.
- Ensured accurate state transitions by incorporating mathematical rules based on primes and powers of two.

Recursive Descent Parser For Custom Language Syntax Validation, Lubbock, TX

November - December 2024

- Lexical Analyzer: Created a tokenizer to identify and classify tokens such as identifiers, keywords, operators, and literals using a state-driven approach with support for multi-character operators.
- Parser: Implemented grammar parsing functions for constructs including assignment, conditionals, input/output operations, and arithmetic expressions, adhering to recursive descent parsing principles.
- Designed error-handling logic that provides diagnostics, specifying the expected token and line number where the error occurred.

FPGA Design and Verification In Verilog, Lubbock, TX

August 2023 - December 2023

- Implemented a 4-bit 7-segment ripple carry adder/subtractor with mode selection for addition and subtraction, demonstrating an understanding of circuits, binary arithmetic, and digital logic design.
- Designed testbenches for functional verification, ensuring the reliability and accuracy of complex digital systems under a range of different simulated conditions, critical for accurate modeling and system reliability.
- Wrote detailed documentation for all modules including circuit diagrams, k-maps, and clear language to describe functionality.

ORGANIZATIONS

CodePath TTU Secretary, Lubbock, TX

December 2024 – August 2025

- Organized SSS: Students, Startups, Spotlight, an event where 5 tech industry professionals present a challenge based on current industry demand for students involved in CodePath TTU to solve over the course of a semester.
- Hosted a technical interview preparation workshop once a week focused on datastructures and algorithms.