Shlok Bhakta

254-251-9749 | shlokbhakta1@gmail.com | in.shlokbhakta.dev

shlokbhakta.dev

EDUCATION

Texas A&M University, *College Station, TX* *05/2026*
Bachelor of Computer Science *GPA:3.8*
Minor in Cybersecurity

Relevant Coursework: Program Design & Concepts, Data Structures and Algorithms, Machine Organization and Programming, Database Systems, Introduction to Computer Systems, Foundations of Software Engineering

EXPERIENCE

Teaching Assistant: *CS 111 - Intro to Programming Concepts, Texas A&M University* *08/2024 - Present*

- Proctor **2 lab** sessions for **23 students** weekly by providing real-time assistance with **Java** during coding assessments, leading to improved performance and timely completion of assignments.
- Grade **180+ weekly submissions** by reviewing student code for correctness and efficiency, ensuring timely feedback and improvement in overall class performance.

SKILLS

- C++, Python, Java, Git, JavaScript, TypeScript, Astro JS, Haskell, Assembly, C (embedded), SQL
- CI/CD, Github Actions, CPU Design, Docker, Blender 3D, Digital Forensics, Networking, Postgres, MongoDB, MySQL

PROJECTS

Personal Website: *Full Stack Web Development, Self Led* *06/2024*

- Scaled blog performance to handle **10,000+ requests/sec** using **NGINX**, achieving **<100ms** load times.
- Deployed a **5000 concurrent connection** backend using **Pocketbase** with **Docker** resulting in robust and scalable backend infrastructure.
- Automated the build pipeline with **GitHub Actions** to generate static **HTML** using **AstroJS** and package it into **Docker**, achieving a ***1-minute build time*** and supporting over ***1,500 site versions per month*** on the free tier.
- Deployed enterprise-grade security measures, including **Cloudflare's DDoS** protection and DNS security, fortifying the site against malicious traffic and increasing system **stability by 20%**.

Build A Rocket: *Aggie Coding Club Project Manager, Texas A&M University* *12/2023*

- Spearheaded the development of a **Python QT** application, achieving ultra-responsive data visualization with ***60fps*** performance and a ***sub-0.25 second*** delay in live telemetry graphing.
- Enabled seamless live telemetry transmission from a rocket by instructing ***50 students*** in the **Arduino framework** using **C++**, resulting in enhanced real-time data reliability.
- Facilitated **6 successful rocket launches** by designing and implementing a **custom PCB** using **EasyEDA** for ground and rocket radios, ensuring comprehensive real-time telemetry.

RISC CPU: *Lead Programmer, Arithmetic Logic Unit Design, Computer Organization* *05/2024*

- Engineered the **Arithmetic Logic Unit (ALU)** using basic logic gates, enabling matrix multiplication for a functional **RISC CPU** with over ***100,000 transistors***, resulting in the capability to run **custom Assembly code**.
- Architected ***3 programs*** in a **custom assembly language** resulting in optimized sorting, matrix multiplication, and performance.

EVENTS

Tamu Datathon: Chess Style Engine, *Texas A&M University* *04/2024*

- Developed an ***AI engine*** for Pop Tic Tac Toe using **Python**, implementing **bitboard representation** and **minimax algorithm** with **alpha-beta pruning**, achieving a **0.15 second average response** time and **80% win rate** against human opponents in competition
- Optimized performance through **8 iterative versions**, incorporating advanced techniques like **transposition tables** and **move ordering** to efficiently search an 8x8 game grid, demonstrating strong **problem-solving skills**

Tamu CTF: *Forensics. Web Exploitation, Texas A&M University* *04/2024*

- Ranked ***7th*** out of ***80–90 teams*** by deconstructing a Minecraft mod **JAR file**, reading over ***8 billion*** Minecraft blocks, and extracting ***8 megabytes*** of data to reconstruct a **Linux filesystem** in **Python** and retrieve the flag, contributing to a ***14% increase*** in overall team score.
- Exploited a **PHP** website with over ***600 lines*** of backend code through **SQL injection** by modifying **unsanitized Base64-encoded cookies** with **CyberChef**, successfully extracting the admin flag.