

Shlok Bhakta

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shlokbhakta.dev

EDUCATION

Texas A&M University, College Station, TX
Bachelor of Computer Science
Minor in Cybersecurity

05/2026
GPA: 3.8

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 AI 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.