Shlok Bhakta

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EDUCATION

Texas A&M University, College Station, TX *05/2026*

Bachelor of Computer Science

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

SKILLS

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

PROJECTS

Personal Website: *Full Stack Web Development, SELF LED* *06/2024*

- Optimized blog performance to handle up to ***10,000 requests per second*** using **Nginx**, resulting in lightning-fast load times and enhanced scalability.
- Handled ***5000 concurrent connections*** by rolling out **Pocketbase** completely self-hosted in **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.
- Enhanced global security and ensured ***99.999% uptime*** by serving the site through **Cloudflare tunnels**, providing reliable access and **DDoS protection**.

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 Lite: *Prompt Injection, Web Scraping, Texas A&M University* *04/2024*

- Led team to achieve ***2nd place*** out of ***54 teams*** by excelling in **web scraping**, **data interpolation**, and **prompt injection** challenges, contributing to a ***50% increase*** in overall team score.
- Devised **8 innovative prompt injection phrases**, earning a score of nearly ***3,500*** out of a possible ***7,000*** points, and securing the highest individual score on the team.

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.