Shlok Bhakta

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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

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.