

# Shlok Bhakta

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## EDUCATION

### Texas A&M University

College Station, TX

*Bachelors in Computer Science - Minor in Cybersecurity || GPA: 3.85/4.00*

*Aug 2022 – May 2026*

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

## SKILLS

**Languages:** C++, Python, Java, C, JavaScript, TypeScript, SQL, R, Ruby, Haskell, Assembly

**Technologies:** Node.js, Svelte, Astro.js, MySQL, MongoDB, Postgres, Git, Docker, Heroku, GCP, PyTorch, TensorFlow, Qt, GTK, Wireshark, Gihdra

## EXPERIENCE

### Teaching Assistant

Texas A&M University

*CS 111 - Intro to Programming Concepts*

*Aug 2024 – Present*

- Proctor 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.

## PROJECTS

### Personal Website | Full Stack Web Development, Self Led

06/2024 - Present

- Optimized blog performance to achieve *<100ms load times*, a *66% improvement*, by implementing **AstroJS** for static site generation and image optimization to **WebP** format.
- Engineered a scalable backend infrastructure using **Node.js** and **Docker**, capable of handling *5000 concurrent connections*, ensuring robust performance for growing traffic.
- Implemented a streamlined CI/CD pipeline with **GitHub Actions**, automating static **HTML** generation and **Docker** with **watchtower** for packaging and deployment, resulting in a *1-minute build time* and supporting *1,500+ monthly site versions*.
- Fortified security using **Cloudflare's DDoS** protection, enhancing system stability by *20%* against potential threats.

### Personal Homelab | Self-Managed Infrastructure

01/2018 – Present

- Architected and maintained a robust homelab infrastructure running *19 active Dockerized services* across multiple nodes, achieving *99.9%* uptime and demonstrating advanced system administration skills.
- Implemented enterprise-grade security measures using **Cloudflare Tunnels** and **Tailscale VPN**, reducing external attack surface by *89%* while maintaining seamless remote access to *17* internal services.
- Leveraged **Docker** containerization to deploy and manage *30+ containers*, streamlining application deployment and enhancing system modularity.
- Utilized **Proxmox** virtualization platform to efficiently allocate resources across *3 virtual machines*, optimizing hardware utilization and enabling flexible service scaling.

### SignSense | Sign Language Learning Web Application

10/2024 - 10/2024

- Developed a real-time sign language recognition system capable of identifying *26 English alphabet gestures* with *80% accuracy* using **FastAPI** and **Python**, enhancing accessibility for *6 concurrent users*.
- Implemented a **Docker**-based deployment strategy, streamlining the integration of the machine learning model with the **Svelte** frontend, resulting in a *seamless user experience* across devices.
- Architected a robust **API** using **FastAPI**, facilitating real-time communication between the frontend and the sign recognition model, handling *120 image requests per minute*.

### Panda POS | Full Stack Web Development, Team Project

10/2024 - 12/2024

- Engineered a scalable Point of Sale system using **Astro.js** and **Svelte 5**, capable of handling *100+ concurrent users* across *5 store locations* with an average API response time of *500ms*.
- Implemented a robust **Node.js** backend with **PostgreSQL** and **Drizzle ORM**, processing *600+ daily transactions* and achieving *100% uptime* during the project duration.
- Developed *30+ well-documented APIs* using **Astro.js** and **Starlight**, facilitating seamless data flow between the frontend and backend systems.
- Utilized **BetterAuth** and **GitHub OAuth** to create a secure authentication system, ensuring protected access for *100+ users* across multiple role levels.

## 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.

### 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.