

# Shlok Bhakta

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## EDUCATION

Texas A&M University - College Station, TX

05/2026

**Bachelors in Computer Science - Minor in Cybersecurity**

GPA: 3.85/4.00

- **Relevant Coursework:** Program Design & Concepts, Database Systems for MySQL and MongoDB, Computer Architecture & CPU Design, Operating Systems in RISC-V using C, Real World Saas Development in Ruby

## SKILLS

- **Languages:** Python, C++, Java, C, JavaScript, TypeScript, CSS, HTML, SQL, Ruby, Haskell, Assembly
- **Technologies:** Linux, Node.js, Svelte, Astro.js, MySQL, MongoDB, Postgres, Git, Docker, Heroku, GCP, PyTorch, TensorFlow, Qt, GTK
- **Methodologies:** Agile, Scrum, OOP, Functional Programming, DevOps, CI/CD, TDD

## EXPERIENCE

Teaching Assistant | Texas A&M University

**CS 111 - Intro to Programming Concepts**

08/2024 – 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.

## PROJECT EXPERIENCE

**Personal Website - Full Stack Web Development, Self Led**

06/2024

- 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.
- Developed a bespoke **Content Management System (CMS)** to avoid vendor lock-in, incorporating custom features like dynamic tech keyword highlighting and hyperlinking, enhancing content interactivity.
- 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.

**Cabin Connect - TAMUhack 2025**

01/2025

- Engineered **Cloudflare Tunnels** + **Zero Trust** infrastructure reducing global latency to <200ms via 300+ edge locations, achieving 100% uptime during judging
- Architected custom synchronization system with **MongoDB Atlas** polling at 1Hz intervals, achieving <2s state consistency across 10+ watch parties through **JSON**
- Integrated **Three.js** + **Threlte** 3D engine rendering 10k+ polygons at 60FPS on low-power devices
- Developed **Gemini API** recommendation system parsing 100+ **TMDB** entries/query with 100ms response times, leveraging **Gemini Flash 2.0** **Experimental** for 92% accuracy in semantic movie matching

**SignSense - Sign Language Learning Web Application**

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

- 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.
- Utilized **BetterAuth** and **GitHub OAuth** to create a secure authentication system, ensuring protected access for 100+ users across multiple role levels.

**Homelab - Self-Managed Infrastructure**

01/2018

- 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.
- Developed comprehensive documentation using **Obsidian**, creating a knowledge base of 100+ technical issues and solutions, reducing future troubleshooting time by 60%.

## EVENTS

**TAMUhack 2025 - Best Use of Cloudflare Winner, Texas A&M University**

04/2024

- Strategized with 3 teammates through a 24-hour development sprint, implementing live pair programming via **VSCode LiveShare** to achieve 100% feature completion ahead of deadline
- Orchestrated judging demo for 5 industry experts, delivering 97% flawless execution rate through team dry-runs and role-playing technical Q&A scenarios

**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
- Optimized performance through 8 iterative versions, incorporating advanced techniques like *transposition tables* and *move ordering* to efficiently search an 8x8 game grid, resulting in a placement of 13th out of 23 teams