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

- Stratagized 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*, rusulting in a placement of *13th* out of *23 teams*