Raghav Ojha

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EDUCATION

- **Texas State University** — San Marcos, TX
  Bachelor of Science in Computer Science with a Minor in Mathematics; GPA: 3.8 — *Aug 2023 – Aug 2027*
  - **Coursework:** Algorithm Analysis, Discrete Math II, OOPs in Java, Computer Architecture

EXPERIENCE

- **Texas State University – Office of Distance Education** — San Marcos, TX
  IT Assistant — *May 2024 – Sep 2024*
  - **Asset & Database Management** Tracked and maintained $2M+ in IT hardware using **SQL**, **Microsoft Access**, and **ServiceNow**, cleaning and reconciling data across sources to enable accurate reporting and recovery.
  - **Automation and System Setup** Automated setup of 100+ devices using **PowerShell**, **Bash**, **Batch**, and **Python**, integrating with **Task Scheduler**, **WSL**, and **cron**, reducing provisioning and configuration time.
  - **Web & Internal Tools Support** Maintained department site via **Gato CMS**, publishing 50+ content items using Javascript, Markdown, and CMS scripting tools; wrote **Python** and **Bash** scripts to audit content, detect 100+ broken links, and ensure site integrity with **Git**.

- **Texas State University – University Advising Center** — San Marcos, TX
  Student Advising Assistant – Computer Science — *Jun 2024 – Present*
  - **Department Representation** Served as one of the first points of contact for new **Computer Science** and **Data Science** students at Texas State, offering one-on-one advising during Student Orientation.
  - **Academic Communication** Helped over 800 students and families understand academic policies, registration systems, and program options in a clear, approachable manner.

PROJECTS

- **Lit – A Local Git Clone in Java** — Github
  Java, Gradle, Bash, JUnit, SHA-1, Serialization, CLI, Agile
  - Developed a **Java**-based local version control system replicating core **Git** functionalities (`init`, `add`, `commit`, `branch`), with a custom content-addressable storage using **SHA-1** hashing and object **serialization**.
  - Engineered **CLI** support for common Git commands and automated recursive file tracking using `Tree` and `Blob` objects to manage file state changes.
  - Utilized **Gradle** for build automation and **JUnit** for unit testing, ensuring robustness of object lifecycle, commit history, and directory state management.

- **Enigma Machine Simulator** — Github
  C++, STL, JavaScript, Three.js, Docker, CMake, CI/CD, OOP
  - Developed a **C++** simulator of the WWII **Enigma I** machine with accurate modeling of rotors, reflectors, plugboard wiring, and implemented rotor stepping including the double-stepping anomaly.
  - Achieved 80% unit test coverage using **Catch2** and automated builds/tests with **Docker**, **CMake**, and **GitHub Actions** for reliable cross-platform CI.
  - Engineered a realistic, interactive **3D visualization** using **JavaScript** and **Three.js**, featuring a detailed model and a command-based interface designed to communicate with the C++ encryption core.

- **MonkFish – A Zen-Inspired Chess Engine** — Github
  Python, Stockfish, React, JavaScript, Bash
  - Developed a unique **Python-based** chess engine that layers a "Zen" strategy over **Stockfish**, favoring balanced positions and punishing overextensions.
  - Engineered a custom evaluation algorithm parsing Stockfish's real-time analysis tree to select moves leading to neutral or non-committal positions. Deployed with a modified **React** frontend allowing interactive gameplay.

SKILLS & ACHIEVEMENTS

- **Programming Languages** Java, C++, Python, SQL, Bash, HTML, CSS, JavaScript
- **Frameworks & Libraries** JUnit, Catch2, Gradle, Maven, CMake, Matplotlib, NumPy, React, Spring, Three.js
- **Development Tools** Git, GitHub, Docker, VMware VirtualBox, VS Code, GitKraken, Vim, Jupyter Notebook, Google Colab, Postman, Jira, Tableau, WSL, Cron, SSH, Debian, Firebase, Heroku, MySQL, Kubernetes
- **Academic Honors** Presidential Honors Scholarship Recipient, Dean's List, Honors College Student
- **Hackathons** TXST Open Datathon 2025 - First Place, Austin AI Community Hackathon - Bounty Hunter Runner-up