

Kush Solanki

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EDUCATION

Missouri University of Science and Technology

Rolla, MO

Bachelors in Computer Science, GPA- 3.9 | Dean's List

Aug. 2023 – May 2026

EXPERIENCE

NSF Research Intern

May 2025 – July 2025

National Science Foundation

Rolla, MO

- Collaborated with a research team to develop a battery-aware deep-reinforcement learning framework for autonomous miner navigation in simulated underground environments.
- Engineered modular simulation environments and sensor models** in Python to emulate real-world energy and obstacle dynamics, supporting systematic experimentation and testing.
- Designed and integrated a CNN-based perception module into the PPO agent using **CUDA-accelerated PyTorch**, boosting the navigation success rate from **79.8%** to **99.7%** by enhancing visual feature extraction.

PROJECTS

JobTrackAI - AI-Powered Application Tracker

October 2025 – November 2025

JavaScript, HTML/CSS, React, Node.js, Express, MySQL, JWT, Git

- Architected a secure React/Node.js/Express platform, implementing a scalable RESTful API and a MySQL relational database to centralize and manage rich application data.
- Built a highly responsive user dashboard (React) featuring application creation, inline editing, and a powerful table view with status chips, filtering, and sorting for efficient application tracking.
- Developed a Manifest V3 Chrome Extension integrated with Groq AI (LLM) via a dedicated backend endpoint to automatically parse and extract comprehensive job details (qualifications, responsibilities) from any web page.
- Secured the platform by implementing authorization middleware, utilizing JWT for robust session management, and protecting user credentials with Bcrypt password hashing.

Wage Wizards - HR Management System

August 2024 – December 2024

HTML, CSS, Php, MySql, Git, XAMPP

- Engineered a secure, role-based payroll management system, implementing authentication and access control for HR, accountants, and employees.
- Developed dynamic, database-driven functionalities using MySQL and PHP for employee records, salary processing, and financial reporting.
- Designed an intuitive, responsive UI with modular components and a role-specific dashboard to optimize user experience and workflow efficiency.
- Deployed on a XAMPP-based server with structured configuration guidelines, ensuring seamless installation, scalability, and maintainability.

Orbital – Real-Time C++ Simulation Game

March 2025 – April 2025

C++, SFML, Object-Oriented Design, Real-Time Systems, Git

- Designed and developed a real-time 2D space simulation using SFML, featuring dynamic orbital mechanics, collision detection, and player control systems.
- Built a modular engine architecture separating logic, rendering, and input layers, applying embedded-style event-driven programming and optimization techniques.
- Optimized update loops and resource management for low-latency performance and scalable hardware deployment.

TECHNICAL SKILLS

Languages: Python, C/C++, JavaScript, HTML/CSS, MySQL, PHP

AI/ML & Deep Learning: PyTorch, Stable Baselines3, CUDA, OpenAI API, TensorBoard

Web & Frameworks: React, Node.js, Express, Material-UI, Nivo, SFML, Pygame, XAMPP

Tools & Data: Git, VS Code, NumPy, Pandas, Matplotlib, Linux, Windows

Certifications: Intro to Web Development, Programming with JavaScript