GURTEJ SAINI

Moscow, ID

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Education

B.S. Computer Science **January 2021 – May 2025**

University of Idaho *Moscow, ID*

Key Technical Skills, Core Strengths, Relevant Coursework

- Python / Flask
- Git / Linux / Docker
- JavaScript / React
- C / C++
- C# / Unity
- Unreal Engine
- SQL / Neo4j
- Pandas / NumPy
- ESP32 / FreeRTOS
- OpenCV
- Computer Architecture
- Embedded Systems

Experience

Schweitzer Engineering Laboratories **May 2024 – Present**

Software Engineer Intern | Python, JavaScript, Flask, HTMX *Pullman, WA*

- Designed and developed a new automation tool for engineers that reduces time spent editing bill of materials drastically.
- Replaced manual Excel workflows with an accessible web application that makes collaboration and sharing possible.
- Enhanced internal tools by fixing bugs and adding new features for engineering teams to aid product development.

Research Collaboration with Professor **December 2023 – April 2024**

Graph Data Specialist | SQL, Python, Neo4j *Moscow, ID*

- Transformed large-scale, relational buyer-seller transaction datasets into graph databases using Neo4j.
- Collaborated in the design of data models to convert the relational data into a native graph data structure.
- Enabled analysis of supply chains and facilitated structural path analysis of the economy.

Game Devs United **January 2023 – December 2023**

Gameplay Programmer | C#, Unity *Moscow, ID*

- Designed and implemented a first-person shooter game with a team of six members in Unity.
- Developed a movement system, a shooting system, and a simple user interface in C#.
- Presented progress reports and product demonstrations to team members in weekly meetings.

Projects

AteChip | *JavaScript, Computer Architecture, Console Emulator* **November 2023**

- Designed a retro console emulator that allows running legacy software in a modern web browser.
- Implemented debugging capabilities for CHIP-8 games like Tetris, Pong, Breakout, Space Invaders, etc.
- Built the user interface elements like the screen and the debugger in HTML/CSS.

PicoMatrix | *C, Ncurses, Terminal, Screensaver* **June 2023**

- Recreated the digital code rain effect from the cyberpunk movie franchise, "The Matrix".
- Utilized C and the Ncurses library to display the effect on a terminal.
- Documented the project details and process on GitHub.

WarpSpeed | *Lua, Love2D, 3D Perspective Projection* **March 2023**

- Simulated the effect of travelling through space using Lua and the Love2D game engine.
- Achieved the illusion of a 3D space on a 2D plane using perspective projection.
- Implemented adjustable travel speed using mouse movement inputs.

Spotiboi | *Python, Spotify, Linux, D-Bus* **February 2022**

- Developed advertisement detection for the Spotify desktop app using Python and Linux D-Bus IPC service.
- Monitor any status change in Spotify to mute the app via PulseAudio API if an advertisement is playing.
- Understood inter-process communication mechanism in a desktop Linux environment.

Extracurricular

Association for Computing Machinery@UIdaho **January 2023 – Present**

Member *University of Idaho*

- Represented University of Idaho in a competitive problem-solving hackathon against Washington State University.
- Attended and participated in seminars and learning sessions for new and interesting technologies like the Rust programming language, Firebase cloud database, etc.

Awards and Scholarships

- University of Idaho's Dean's List (Fall 2023)
- Invitation to Idaho Scholarship (2021 – Present)