

GURTEJ SINGH

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Education

B.S. Computer Science

University of Idaho

January 2021 – May 2025

Moscow, ID

Key Technical Skills, Core Strengths, Relevant Coursework

- JavaScript / React
- Python / Lua / Ruby
- Assembly / AVR ASM
- Operating Systems
- C / C++
- C# / Unity
- Neo4j / Cypher / SQL
- Computer Architecture
- Git / Bash / Linux
- PowerShell / Hyper-V
- Analysis of Algorithms
- Computer Graphics

Projects

AteChip | *JavaScript, React, Console Emulator*

November 2023

- Designed a retro console emulator that allows running incompatible 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 React.

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 if an advertisement is playing.
- Understood inter-process communication mechanism in a desktop Linux environment.

Experience

Research Collaboration with Professor

December 2023 – Present

Graph Data Specialist

Moscow, ID

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

Game Devs United

January 2023 – December 2023

Gameplay Programmer

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 report and product demonstrations to team members in weekly meetings.

University of Idaho

August 2021 – August 2022

Food Service Attendant

Moscow, ID

- Resolved customer concerns, relayed relevant information to supervisor, and trained new team members.
- Ensured compliance with company service standards, inventory, and cash control procedures.
- Served customers in a friendly, efficient manner following company’s steps of service.

Extracurricular

Association for Computing Machinery@UIIdaho

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)