Gurtej (Tej) Saini

Software Engineer

Moscow, ID 83843 (Open to Relocation)

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Professional Experience

Schweitzer Engineering Laboratories, Pullman, WA   May 2024 – Dec 2024

Software Engineer Intern

- Built core features for a Flask app that automated inventory and supplier analysis, boosting efficiency by 60% and contributing to over $1M in operational savings.
- Improved data query reliability by 25% by collaborating with customers to troubleshoot issues, expanding unit test coverage, and supporting migration to a newer Python runtime.
- Conducted stress tests on 20+ SEL-2488 satellite-synchronized network clocks, evaluating EMI, temperature, and humidity thresholds to ensure system robustness.
- Documented system architecture, design decisions, and data flow between services in Confluence to support long-term maintainability.
- *Technologies*: Python, Flask, Pandas, Excel, JavaScript, HTMX, Tailwind CSS, Pytest, Bitbucket, Oscilloscopes.

Independent Research Project, Moscow, ID   Oct 2023 – Apr 2024

Data Analyst Consultant

- Built a D3.js visualization tool that enabled 75% faster analysis of social accounting data across U.S. states and counties by highlighting supply chains and dependencies between industries.
- Developed a high-performance data pipeline to convert CSV/SQL data into Neo4j using Pandas and Cypher.
- *Technologies*: Neo4j, D3.js, JavaScript, Python, Pandas, Cypher, SQL, Netlify, Quarto, Git.

Education

University of Idaho, Moscow, ID   *Expected Graduation: July 2025*

Bachelor of Science in Computer Science

- *Courses*: Computer Architecture, Embedded Systems, Operating Systems, Compilers, Algorithms and Data Structures, Computer Vision, Bioinformatics.

Projects

Google Chrome Dino Game + Evolving Neural Networks   Spring 2025

- Built a machine learning system that evolved to beat my high score autonomously using evolutionary algorithms.
- Applied reinforcement learning (NEAT) to iteratively optimize neural network topology and weights based on prior generations' performance, achieving a winning configuration.

Embedded Systems Lab   Fall 2024

- Assembled a custom PCB shield for Arduino Uno R3 and built projects including a combination lock, temperature/humidity sensor, and DC motor controller.
- Used FreeRTOS to schedule tasks and handle interrupts for low-latency responses to external events.

CHIP-8 Console Emulator   Fall 2024

- Developed a retro console emulator using C++, SDL, and Dear ImGui to run software designed for 1970s computers on modern hardware.

Skills and Interests

Skills: Python, Pandas, JavaScript, REST, React, HTMX, Modern C++, C#, Linux, Docker, Bash, Git, SQL

Interests: Homelabbing, Factorio, Computer Graphics, Emulator Development, Physics Simulations, Cryptography