Bibek Kumar Tamang

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Summary

Motivated Computer Science student with expertise in full-stack development, software engineering, and machine learning. Proven ability to build scalable, high-performance systems using Java, Spring Boot, and MySQL during a Data Analyst internship. Passionate about leveraging Agile methodologies, DevOps tools (Git, Docker), and data-driven solutions to solve real-world challenges. Seeking a software engineering role to apply technical skills and adaptability in a dynamic team environment.

Skills

Programming Language: Java | Python | C | C++ | SQL | HTML | CSS | JavaScript
Frameworks & Tools: Spring boot | Spring | Junit | Jupyter Notebook | Pandas | NumPy
Operating System: Windows | Linux | MacOS
DevOps: Git | GitHub | Docker | Maven | Agile Methodologies | Postman
Soft Skills: Problem-Solving | Team Collaboration | Adaptable
Languages: English, Nepali, Hindi – All professional proficiency or above

Experience

Data Analyst, Intern **Jan 2022 – June 2022**

Kaushal English Boarding School (*Kathmandu, Nepal)*

- Led full-stack development of a student management system using JavaFX and MySQL, serving 500+ student records with 99.9% data integrity through ACID-compliant transactions and scalable architecture.
- Engineered optimized relational database schema (ERD-designed) that reduced query latency by 35% and supported 1K+ concurrent CRUD operations, ensuring seamless integration with JavaFX frontend.
- Boosted administrative efficiency by 50% via intuitive GUI design featuring dynamic data validation, real-time analytics dashboards, and role-based access controls compliant with FERPA standards.
- Automated academic reporting workflows using JDBC and JavaFX controllers, cutting marksheet generation time from 15 minutes to 30 seconds per student while eliminating manual data entry errors.

Projects

Maze Solver

- Architected full-stack maze generation engine leveraging Spring Boot microservices and REST APIs, enabling modular algorithm framework (BFS/DFS/Dijkstra/A*) with 99.9% pathfinding accuracy.
- Engineered solo DevOps workflow utilizing Git/GitHub for atomic commit strategies and feature branching, Maven for dependency isolation and automated testing pipelines, and Docker for portable containerization – achieving 100% build reproducibility and enabling seamless deployment transitions from local development to cloud hosting.
- Engineered maze-solving algorithms (BFS/DFS/Dijkstra/A*) with optimized pathfinding efficiency using priority queues, stacks, and adjacency lists, achieving O(n) average-case complexity for 64x64 grids
- Developed interactive maze visualization interface using vanilla JavaScript and HTML5 Canvas, featuring dynamic grid generation (up to 64x64), real-time solving animations, and user-controlled speed adjustments – reducing rendering latency by 30% through optimized path-drawing algorithms.

Java Chip-8 Emulator

- **Demonstrated low-level hardware proficiency** by reverse-engineering and implementing a virtual machine that simulates core computer components, including a CPU instruction cycle, memory management, and display hardware.
- **Achieved 95% accurate system emulation** through a meticulously crafted interpreter for the 35+ opcodes, faithfully replicating the CHIP-8's architecture and ensuring authentic program execution.
- **Enabled 60% smoother graphics rendering** by developing a pixel-based display system and precise timer interrupts, effectively simulating the behavior of original hardware for a seamless visual experience.

Education

Bachelor of Science **Youngstown State University** (*Youngstown, OH)* **May 2026**

- Major in Computer Science
- Minor in Mathematics

Course

- **Computer Science:** Data Structure and Algorithm | Data Structure and Object | Advance Object-Oriented Programming | Data Science and Machine Learning | Computer Organization | Discrete Structure | Development of Database | Information Assurance
- **Mathematics:** Calculus I | Calculus II | Linear Algebra and Matrix Theory | Probability and Statistics