Bibek Kumar Tamang

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Summary

A motivated Junior Full-Stack Developer with a strong foundation in Java and Spring Boot. Proficient in end-to-end development, including database design, RESTful API creation, and responsive front-end work. Supplemented by academic or personal project experience in AI/ML concepts and neural networks. Knowledgeable in DevOps practices such as Docker and CI/CD. Eager to apply my combined skills in software engineering and machine learning to contribute to innovative projects in a collaborative, Agile team environment.

Skills

Programming Language: Java | Python | C | C++ | SQL | HTML | CSS | JavaScript

Frameworks & Tools: SpringBoot | Spring | Apache Kafka | Apache Spark | JWT | Thymeleaf

Databases & Big Data: MongoDB | SQL | NoSQL | Stream Processing | H2

Operating System: Windows | Linux | MacOS

DevOps: Git | GitHub | Docker | Maven | Agile Methodologies | Postman | Containerization | Rest API

Experience

Software Developer, 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

Java Big Data Pipeline
- Built real-time big data pipeline using **Spring Boot** microservices and **Apache Kafka**, processing 1000+ events/second with 99.9% data integrity through event-driven architecture.
- Created stream processing with **Apache Spark** implementing real-time analytics and windowed aggregations, reducing data processing latency from batch hours to seconds
- Developed interactive dashboard with live **data visualization** and real-time filtering using Thyme leaf and Chart.js, enabling instant business insights from streaming data
- Containerized entire ecosystem with **Docker** Compose across 4 coordinated services, achieving one-command deployment and 100% environment consistency

Maze Solver
- Developed a **full-stack** maze generation engine using Spring Boot microservices and **REST APIs**, implementing modular pathfinding algorithms (BFS/DFS) with 99.9% accuracy.
- Designed maze-solving algorithms with optimized data structures (priority queues, adjacency lists), achieving O(n) average-case complexity on 64x64 grids and reducing rendering latency by 30% via efficient path-drawing.
- Implemented a solo **DevOps** workflow using **Git**, Maven, and **Docker**, achieving 100% build reproducibility and enabling seamless deployment from local development to cloud hosting environments.

Autonomous Vehicle Simulator
- Developed a **neural network**-based self-driving car simulation using JavaScript and HTML5 Canvas, implementing a deep Q-learning (DQN) algorithm that successfully learned to navigate a track and avoid obstacles autonomously.
- Optimized the training process by implementing experience replay and reward-shaping, which stabilized learning and reduced the average training time required to achieve a collision-free lap by 40%.
- Engineered the car's sensor system using ray-casting to detect track boundaries, providing real-time input data to the neural network and enabling precise environmental perception for navigation.

Education

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

- Major in Computer Science : Data Structure & Algorithm | Operating System | Object Oriented Programming | Data Science & Machine Learning | Computer Architecture | Networking Concepts & Administration | Development of Database
- Minor in Mathematics : Calculus I, II, III | Probability & Statistics | Linear Algebra & Matrix Theory