Raj Budhathoki

LinkedIn | 330-338-7558 | brajxaviers4@gmail.com | GitHub

Summary

Results-Oriented Computer Science student with a strong foundation in full-stack .NET development and a business-focused mindset. Proficient in modern technologies including C#, .NET 5+, ASP.NET, SQL Server, and RESTful API design, with complementary skills in Java and C++ for robust systems programming. Excels at analytical problem-solving, multitasking in fast-paced environments, and building partnership-oriented relationships. Combines deep technical expertise in software design patterns and secure coding practices with the ability to communicate effectively with both technical and business stakeholders to deliver applications that align with operational and strategic goals.

Skills

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

Frameworks & Tools: **Visual Studio** | NumPy | Scikit learn | Neural Network | Pytorch | Unity Engine | React.js

Databases & Big Data: SQL | NoSQL

Operating System: Windows | Linux | MacOS

DevOps: Git | GitHub | VDI Disk Image Manipulation | Docker | Containerization | **Rest API**

Concepts & Methodologies: AI/ML | OOP | Scrum | **Agile** | SOLID | Automation

Soft Skills: **Problem-Solving** | Team Collaboration | Adaptable | **Decision Making** | **Multi-Tasking**

Projects

Ext2 File System Explorer | C++, Linux, File Systems

- Architected a custom C++ application to directly read, write, and navigate VirtualBox VDI disk images, implementing core Ext2 file system structures like inodes and superblocks to enable low-level disk exploration.
- Engineered an interactive shell with a suite of 7 commands (ls, cd, read, write), providing a user-friendly interface for raw disk interaction and reducing the complexity of manual hex editing for file operations.
- Developed a robust file import/export feature (read/write commands) that reliably transfers data between the host system and the VDI, achieving 100% data integrity for cross-environment file management.
- Automated the parsing of complex binary disk data structures, translating raw sector data into navigable directories and file metadata, which streamlined the file system analysis process and enhanced educational understanding.

Autonomous Vehicle Simulation

- Engineered a neural network from scratch using JavaScript to process real-time sensor data and autonomously control a vehicle's steering, acceleration, and braking within a custom 2D simulation environment.
- Implemented a collision detection system and ray-casting sensor array, allowing the vehicle to perceive its environment and make navigation decisions, successfully completing complex tracks without human intervention.
- Developed and trained the neural network using a genetic algorithm, optimizing the model over multiple generations to achieve a 90%+ success rate on unseen tracks, demonstrating robust generalization and learning capabilities.
- Built an interactive visualization using HTML5 Canvas, providing real-time rendering of the vehicle, sensor data, and neural network decision pathways, which accelerated the debugging and model optimization process.

Awards

- **Dean's List:** Raj Budhathoki of Youngstown, Ohio, Computer Science major, has been named to the Dean's List at Youngstown State University for Fall Semester 2023.
- **Dean's List:** Raj Budhathoki of Youngstown, Ohio, majoring in computer science, has been named to the Dean's list at Youngstown State University for spring semester 2025.

Education

Bachelor of Science **Youngstown State University** (*Youngstown, OH)* **December 2025**

- 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 | Networking Concep and Administration
- **Mathematics:** Calculus I | Calculus II | Calculus III | Linear Algebra and Matrix Theory | Probability and Statistics