Ripudaman Singh

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Summary — Recent graduate with a strong academic record and experience in research, software development, and data analysis. Skilled in Python, C++ and web development. Passionate about creating innovative solutions to solve complex problems.

Skills

Languages Python, Java, JavaScript, C/C++, SQL, HTML/CSS, Go, R
Frameworks React, Flask, ExpressJS, FastAPI, Pandas, NumPy, PyTorch, Matplotlib, SQLAlchemy, SFML, SocketIO, Tailwind
Tools CI/CD, Git, Github Actions, AWS, Jenkins, Docker, SVN, Jira, Confluence

Experience

Visual and Analytic Computing Lab, Memorial University of Newfoundland **May 2023 – Dec 2024**
Research Assistant (Full Time) *May 2024 — Dec 2024*
- Designed and conducted a user study for 30 participants
- Developed data clean-up, aggregation and analysis solution for the user study using Pandas

Software Developer (CO-OP, Full Time) *May 2023 — Dec 2023*
- Developed a flight path visualization XR application in Unreal Engine 5 for Microsoft Hololens 2
- Implemented interfacing using UMG and the ability to manipulate flight paths through hand tracking
- Implemented cross-platform multi-user state synchronization using SocketIO

Data and Image Analysis Group, Memorial University of Newfoundland **Jan 2023 – Apr 2023**
Data Quality Assurance Analyst
- Developed an SSH manager utility using Python to help setup systems seamlessly
- Contributed to a scheduler for a HPC payload processing system

Department of Science, Memorial University of Newfoundland **Sep 2022 – Dec 2022**
Teaching Assistant (Computer Science)
- Assisted first-year students with core computer science concepts such as DFAs, Turing Machines and Regular Expressions
- Graded course work, conducted lab sessions and provided feedback for 40+ students

Student Residences, Memorial University of Newfoundland **Jan 2022 – Apr 2024**
Resident Assistant
- Oversaw and guided 100 students per semester
- Planned and conducted inclusive and welcoming events to help ease the transition to university life

Projects

Marvel Rivals Discord Bot | *Python, discord.py, OpenAI API, AWS EC2, Github Actions, Docker, SQL* **May 2025**
- Developed a Discord bot using Python and OpenAI API to generate humorous, stat-based roasts for players on their performance in Marvel Rivals, with automated CI/CD deployment via Docker and GitHub Actions to AWS EC2

Honours Thesis Project | *Python, matplotlib, opencv, 3D Slicer, tobii* **Dec 2024**
- Developed a framework for collecting and visualizing eye-tracking data for medical image analysis
- Automated loading of DICOM images and ROIs in 3D Slicer and visualizing the spatial data using heatmaps

Bubblegum Bloodbath (C++ Game) | *C++, SFML, ImGUI* **Dec 2024**
- Developed a C++ game from scratch using SFML as part of a group project
- Won Best Overall in the batch

MediSync AI | *ExpressJS, Flask, MongoDB, OpenAI API, React, RAG* **May 2024**
- Won Best Overall at the DO.IT Hackathon as an aide to healthcare professionals, facilitating them to perform complex CRUD operations using natural language and without the need for technical experience

Maze Escape (ThreeJS Game) | *ThreeJS* **Apr 2024**
- Modeled complex movement behaviors like Wander, Seek and Flow Field Pathfinding
- Generated maze dynamically using Depth-First Backtracking Maze Generation

Course Selection Website | *ExpressJS, MongoDB, EJS, Mocha, Tailwind* **Apr 2023**
- Made a course selection website using ExpressJS and MongoDB
- Included authentication middleware and secure password hashing using bcrypt, and automated mocha unit tests for REST API and database operations

Dining Hall Mobile App | *React-Native, Firebase* **Dec 2022**
- Collaborated on a React-Native and Firebase mobile app for our residence's dining hall, providing users with a preview of the menu of the day, and the ability to select meals as their favourite for personalized notifications

Education

Memorial University of Newfoundland **Jan 2021 – Feb 2025**
Bachelor of Science – Computer Science, Honours; GPA: 4.0