Rivan Jarjes

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Education

Toronto Metropolitan University **Expected May 2029**
Hon. B.Sc. in Computer Science *Toronto, ON*
GPA: 4.13 / 4.33, Dean's List, Top Entrance Scholarship

Relevant Coursework

- Introduction to Programming
- Object-Oriented Programming
- Data Structures & Algorithms
- Computer Organization
- Discrete Mathematics
- Principles of Software Development
- Circuit Design
- Assembly
- Unix Operating Systems

Projects

Lateral Pulldown Analyzer | *Python, NumPy, OpenCV, MediaPipe, TensorFlow*

- Developed a real-time machine learning pipeline for live video analysis of lat pulldown form.
- Achieved 90%+ accuracy in real-time pose detection with OpenCV & MediaPipe.
- Built a high-accuracy TensorFlow model for exercise classification with data augmentation & cross-validation.
- Designed an overlay system visualizing joint angles and movement, enabling instant feedback.
- Optimized puzzle generation time by implementing caching and precomputed word lists, reducing load times by 30%.

New York Times Style Mini Crossword Generator | *Python, Java, Spring Boot, React, OpenAI API, Tailwind CSS*

- Developed a full-stack app generating themed mini crossword puzzles using an LLM trained on NYT data.
- Built a Python-based constraint solver ensuring coherent, challenging puzzle layouts.
- Integrated a React frontend with Spring Boot RESTful API and AWS Cloud Computing, generating 200+ puzzles with 100+ users.

Multiplayer Chess Game | *C#, XNA/MonoGame, .NET Networking, Peer-to-peer Architecture*

- Developed a chess game in MonoGame/XNA with full rule implementation, move validation, and game logic.
- Built a custom peer-to-peer networking system for seamless local and online multiplayer gameplay.
- Designed an interactive UI with move highlighting and intuitive controls to enhance user experience.

Relevant Experience

Inspire Curiosity STEM Instruction **Jan 2022 – June 2024**
Ontario Chapter Lead | *STEM Instructor & Technical Curriculum Developer* *Remote*

- Led STEM coding workshops for 15 students, increasing engagement by 40% through a structured curriculum.
- Developed an inclusive, creativity-driven curriculum using Scratch and Python tailored to diverse learning needs.
- Mentored underserved youth in STEM career exploration and tracking education progress.
- Collaborated with instructors to refine workshops based on participant feedback.

TMU Game Makers Union Club **Sep 2024 – Present**
Game Developer | *Unreal Engine & C++* *Toronto, ON*

- Developed and optimized gameplay mechanics in C++ for Unreal Engine, enhancing performance and immersion.
- Programmed core game systems for large-scale projects, ensuring smooth and responsive gameplay.
- Worked with cross-functional teams to align technical execution with creative vision and project goals.

Technical Skills

Programming Languages: Java, Python, JavaScript / TypeScript, C, C++, C#, Objective-C, Swift
Web Development: React, Next.js, Node.js, Tailwind CSS, HTML/CSS
Backend & Databases: Spring Boot,, MongoDB, DynamoDB, SQL
Cloud & DevOps: AWS, Azure, Git, GitHub Actions, CI/CD
Developer Tools: VSCode, IntelliJ, Visual Studio, Xcode, Eclipse, Maven, Docker