Rivan Jarjes

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EDUCATION

Toronto Metropolitan University   **Toronto, ON**
Hon. B.Sc. in Computer Science   *Expected Graduation, May 2028*
- **GPA:** 4.13/4.33, Dean's List, Top Entrance Scholarship
- **Related Coursework:** Introduction to Programming, Object-Oriented Programming, Data Structures & Algorithms, Computer Organization, Discrete Mathematics, Principles of Software Development, Circuit Design, Assembly

PROJECTS

Lateral Pulldown Analyzer   *Jan 2025*
Python, OpenCV, MediaPipe, TensorFlow
- Developed a real-time machine learning pipeline to analyze lat pulldown form, leveraging coordinates generates by the MediaPipe module.
- Applied OpenCV and MediaPipe to extract pose landmarks and calculate joint angles, enabling high accuracy in movement tracking for most body types.
- Trained a TensorFlow model to classify form correctness and identify areas for improvement during exercise video analysis.
- Enhanced usability with clear visual overlays, showing joint angles and movement paths for better understanding of workout form.

New York Times Style Mini Crossword Generator   *Nov 2024*
Python, Java, Spring Boot, React, OpenAI API, Tailwind CSS
- Developed a web application that automates the creation of themed mini crossword puzzles, leveraging a large language model trained on historical New York Times' mini crossword data to generate potential words and hints.
- Implemented a constraint solver in Python to ensure valid grid layouts and letter intersections to ensure a coherent puzzle, while the LLM provided thematically relevant clues and word suggestions.
- Built an interactive React frontend for puzzle generation and solving, alongside Spring Boot backend powered REST APIs integrated with AWS to handle requests, store puzzle metadata, and manage user sessions.
- Engaged over 100 users during its operation, resulting in the creation of more than 200 themed puzzles.

VOLUNTEER EXPERIENCE

Inspire Curiosity STEM Instruction   **Remote**
Ontario Chapter Lead   *Jan 2022 – June 2024*
- Facilitated interactive programming workshops in Scratch, teaching foundational coding concepts and fostering computational thinking in young learners.
- Designed and delivered inclusive curriculum tailored to diverse student needs, promoting creativity and problem-solving in STEM.
- Mentored and motivated underserved youth, encouraging exploration of STEM careers and tracking progress to optimize learning outcomes.

TMU Game Makers Union Club   **Toronto, ON**
Programmer   *Sep 2024 – Current*
- Collaborated on large-scale game development projects, programming gameplay mechanics and systems in C++ for Unreal Engine.
- Optimized performance and implemented features such as AI behaviors, physics interactions, and UI elements, enhancing the overall user experience.
- Participated in cross-disciplinary team efforts, working closely with designers and artists to align code functionality with creative vision and project goals.

SKILLS

Programming: Java, Python, JavaScript/TypeScript, HTML/CSS, SQL, Node.js, React.js, C++, C, C#, .NET
Tools: VSCode, Visual Studio, IntelliJ, Azure, Xcode, Eclipse, AWS, Git, Spring Boot, Tailwind CSS, DynamoDB, MongoDB