

# DYLAN PATRASCU

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## EXPERIENCE

## Technical IT Assistant

May 2023 - August 2023 &amp; May 2024 - August 2024

Ministry of the Solicitor General

Hamilton, ON

- **Automated network drive** mapping using **Python** to smooth the user experience, leading to a drastic decrease in user error
- Automated the **metadata lookup** for machine disposal through a Python script, further optimizing the inventory management workflow
- Debugged a regression in a legacy **VBScript program** to support new Windows 11 machines
- Provided in-court tech services in time-sensitive and high-pressure situations
- Communicated technical concepts to non-technical individuals, enabling clients to understand and utilize software solutions effectively

## Unity Tutor

March 2025 - April 2025

*Self-Employed*

London, ON

- Taught **Unity fundamentals**, including **scene setup**, **game object management**, and **scripting**
- Guided students through creating **interactive environments**, **UI menus and popups**, including a fully functional inventory system
- Implemented a secure **load/save functionality** using **custom-encoded binary files**

## Python Tutor

December 2024 - March 2025

*Self-Employed*

Remote

- Taught **Python** programming concepts to beginners with little to no experience, building their skills from the ground up while applying good programming principles
- Delivered personalized Python lessons, covering fundamental programming concepts such as **data structures and object-oriented programming**, as well as an introduction to **data science**
- Simplified complex computer science principles, including **recursion and algorithm efficiency**, to build a strong technical foundation for students

## PROJECTS

## VR Marine Biology Capstone | Unity VR, C#, GitHub, Agile

September 2024 - April 2025

- Collaborated in a team of five to design and develop an **educational VR simulation game** to teach marine conservation and ocean research techniques
- Created engaging minigames for satellite tagging (**time-based challenge**), eDNA sampling (**interactive puzzle**), and BRUV deployment (**world interaction**) to simulate real-world marine biology research activities
- Implemented **accessibility features**, including captions for deaf users and colorblind-friendly environments
- Engaged in **ongoing communication with project supervisors** to ensure a realistic representation of marine biology research
- Applied **Agile development practices**, including creating **storyboards**, **user stories**, and **UML diagrams**, managing tasks via **GitHub Projects**, and using **GitHub** for version control and collaborative development
- Wrote a **Unity Shader** using **ShaderGraph** to simulate realistic seaweed swaying
- Used **GitHub** for version control and tracked development using **GitHub Projects** (Jira Equivalent)

**Cannonball Run** | Unity3D, C#, GitHub, Agile

January 2025 - April 2025

- Developed a **procedurally generated 3D racing rogue-like** in **Unity** in a **team of four**, featuring **dynamic track generation**
- Implemented a **tree structure for level progression**, allowing players to choose paths and encounter randomized upgrades
- Created a **progression system** including limited garage stops for repairs and upgrade opportunities
- Designed an **adaptive difficulty system** where enemy AI and traffic frequency scale with player progression

## TECHNICAL SKILLS & CERTIFICATIONS

**Programming Languages:** Java, Python, JavaScript, HTML/CSS, C/C++/C#, SQL/PHP, R, GDScript, Unreal Engine Blueprint.

**Developer Tools:** Git, JSON, JUnit, Jira, React, VS Code, PyCharm, Eclipse, MongoDB, Godot, Unity, Unreal Engine, Blender, Aseprite.

**Spoken Language:** Fluent English, Fluent French, Fluent Romanian, Conversational Japanese.

**Certifications:** IBM Z Xplore - Concepts, IBM Z Xplore - Advanced, Certificate of Studies in French Immersion (FSL).

## EDUCATION

## University of Western Ontario

September 2021 - April 2025

**Bachelor of Science in Computer Science (**Honours**)**

London, ON

*Minor in Game Development*

- **3.9 GPA - Dean's Honour List**
- **Dedicated member of the *Game Development Society (GDS)* & *Fashion & Lifestyle Society (F&LS)***

## SMALLER PROJECTS

Unnamed RPG | Unity3D, C#, Github

May 2025 - Present

- **Solo developed** an RPG game with **modular architecture** designed for future **multiplayer expansion**
- Implemented a **third-person controller** using **Unity's new Input System**, featuring **player movement**, **combo attacks**, and **gathering**
- Built a **modular quest system** using **Scriptable Objects** for kill/gather objectives
- Developed **weapons** with **critical damage mechanics** and **combat effects**, such as burn and poison
- Designed **interactive environment objects**, such as collectible mushrooms
- Created a **customizable minimap** with **adjustable zoom** and **toggleable player/map rotation**
- Experimented with **Unity Netcode for GameObjects** to enable networked gameplay

Volleybirds (Mini Jam 184) | Unity3D, C#, Github, Procreate

May 2025

- Placed **18th out of 100+ submissions** in a **72-hour game jam** with the theme of "Birds" and the limitation of "Under a Minute"
- Developed a **2D local co-op game in Unity** with a team of four, where two players rally a ball and reach the highest possible height
- Implemented both **player controllers** using one script and an **enumeration**
- Created **custom game logic** that uses a mix of rally length between players and the highest height to determine a score
- Made **dynamic collision behaviour** between players and the ball, based on **camera position**
- Created **2D assets** for the **user interface** and **in-game obstacles**

Breaking Bob (GDS x LOJAM 2025) | Unity2D, C#, GitHub

March 2025

- Won **Judge's Choice for Best in Game Mechanics/Fun** and **People's Choice**
- Developed a **2D top-down action game in Unity** in **6 days** in a **team of three**, where players must destroy enemies, cars, and buildings to clear the city before the timer runs out
- Developed an **interactive particle system** for props, **enhancing visual effects and immersion**
- Implemented a **dynamic NavMesh system for enemy AI**, enabling **real-time pathfinding updates** as buildings are destroyed.

Micro Movers (GDS Micro-Jam 2025) | Unity2D, C#, GitHub, Aseprite

January 2025

- Won **Judge's Choice for Best in Art** for visual design and presentation
- Developed a **2D puzzle game in Unity** in **48 hours** in a **team of two**, where players collect and shrink objects to fit them in a moving truck
- Implemented **player controller** and **player-environment interaction**, **level design**, and created all **art** and **user interface** using **Aseprite**

Shift Racer | Unity 3D, C#, GitHub

December 2024

- Developed a **ready-to-ship** street racing game in **Unity C#**
- Designed a modular radio system using **Scriptable Objects**, where songs change depending on the car's gear
- Implemented an **AI waypoint tool**, allowing for modular car traffic at run-time using prefabs and a spawner
- Implemented a slow-motion effect where the player and surroundings are slowed at different time scales, including a trail effect

Personal Website (dylanpatrascu.com) | React, Vite, GitHub

February 2025 - Present

- Developed a personal website to showcase projects and experience
- Used **APCA (Accessible Perceptual Contrast Algorithm)** to **randomize website theme** while **maintaining accessibility**
- Created a **dynamic UI** that adapts to all screen sizes
- Implemented **frontend with React and Vite** for a modern appearance

MongoDB Deep-Dive | MongoDB, React, CSS

December 2024

- Conducted an in-depth architectural analysis of **MongoDB**, including data flow, scalability mechanisms, and performance optimization for dynamic applications
- Developed and deployed a **movie database** case study utilizing MongoDB to demonstrate robust API integration, dynamic data handling, and real-time search functionality
- Explored and tested **MongoDB's** sharding, replication, and indexing features to optimize performance in high-concurrency environments

Language Localization Tool | Unity Editor, C#

November 2024

- Developed a **dynamic localization tool in Unity C#** using **Scriptable Objects** with two serialized lists for managing keys and values, supporting scalable multilingual text management
- Changes made to keys are consistently reflected across all languages, maintaining **synchronization** and translation accuracy
- Implemented a **custom editor window** to efficiently add, edit, and maintain languages and key-value pairs

## NOTABLE ROLES

Spring Fashion Show Co-Director

September 2023 - May 2024

*Fashion & Lifestyle Society (University of Western Ontario)*

London, ON

- Organized a high-fashion Fashion Show with **220+ attendees**
- Collaborated with designers to create 20+ handmade runway looks using **ethically sourced fabrics**
- Curated soundtrack and coordinated **live music** for the event
- Managed **venue booking, scheduling, sponsorship, budgeting, and advertising**
- **Led a team of 20** to execute the fashion show's theme and vision