

# Aly Embaby

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Languages: English (Fluent), Arabic (Native)

## EDUCATION

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### Algonquin College - Game Development Advanced Diploma

Sept 2023 – Apr 2026

GPA: 3.7 | 4× Dean's Honour List

## RELEVANT EXPERIENCE

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### Game Developer (Part-Time) - Liquid Metal Games - Unreal Engine 5

May 2025 – Present

- Developed gameplay systems in Unreal Engine using Blueprints, C++, and GAS including a skill tree with skill points, health/shield/stamina systems, and hit reactions
- Implemented player combat mechanics including dashing, dodging, multiple weapon types with equip/unequip, projectiles, and socket-based weapon attachment
- Built traversal and movement systems including mantling, camera shake, and level transitions
- Improved FPS by 20-30 frames by implementing distance-based rendering for foliage
- Programmed enemy AI with patrol behaviours, death logic, and combat interactions

### Going Once! (Capstone) - Unity

Sept 2025 – Apr 2026

- Designed and implemented a complete UI framework using Unity UI Toolkit, including menus, loading screens, adaptive resolution handling, and runtime graphics configuration
- Developed runtime gameplay systems including configurable settings, achievement tracking, and tutorial logic with persistent state management
- Built reusable systems including a base tool class used across 5 minigames, shared settings for menus, and a callable achievement/tutorial popup system
- Collaborated in an 11-person multidisciplinary team using Git and Jira
- Produced structured technical documentation including UML and sequence diagrams

### 2D Stealth Game - Unity

Jan 2025 – Apr 2025

- Developed a top-down stealth game featuring enemy field-of-view detection and fog-of-war systems
- Implemented AI patrol routes, distraction mechanics, and alert state transitions for strategic gameplay
- Built three playable levels with increasing difficulty, a main menu, and win/lose conditions

### Mario Games - Unity

Sept 2024 – Apr 2025

- Designed and built a full level with layered collisions, interactive hazards, and skill-based challenges
- Implemented 10+ enemy and hazard types including scaled enemy variants, patrol behaviours, and environmental obstacles
- Developed 5+ interactive systems including toggleable coins, breakable blocks, item boxes, and power-ups

### 2D Platformer Level Design - Unreal Engine 5

Sept 2024 – Apr 2025

- Designed 12 interconnected rooms with platforming, combat, puzzle, and parkour challenges
- Iterated on design through playtesting and produced documentation including mini-map, pacing chart, and analysis

## SKILLS

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**Programming:** C++, C#, JavaScript

**Unreal Engine:** Blueprints, GAS, Enhanced Input, Blend Spaces, Animation Montages, Widget Blueprints, Line Traces, Delegates/Events

**Unity:** UI Toolkit, Scriptable Objects, New Input System, Animator, Rigidbody/Colliders

**AI:** Behavior Trees, State Machines, Enemy AI, NavMesh

**Systems:** Physics & Collision, Raycasting, Object Pooling, Scene Management, UI Systems, Event Systems

**Tools:** Git, GitHub, Visual Studio, VS Code, Jira, Photoshop, Illustrator, Premiere Pro, 3DS Max

**Workflow:** Agile/Scrum, Object-Oriented Programming (OOP), Event-Driven Programming, Debugging, Code Reviews, UML, Technical Documentation