

EMMANUEL OYEBAMIJI

Unity Gameplay Programmer

emmanueloyebamiji03@gmail.com | +234-706-894-4276 | emmydev06.netlify.app | github.com/EmmyAkin | linkedin.com/in/emmanuel-oyebamiji-damilare

PROFESSIONAL SUMMARY

Unity Gameplay Programmer with hands-on experience designing and implementing complete gameplay systems, physics-driven mechanics, procedural generation algorithms, and AI pathfinding in Unity3D and 2D using C#. Proficient in game loop architecture, object pooling, SOLID design principles, Scriptable Object data patterns, Unity Input System, and event-driven state management. Proven ability to ship polished, performant builds — sustaining 80–100 FPS in both editor and standalone builds. Seeking a Junior Unity Developer or Gameplay Programmer role to contribute technical depth, creativity, and a strong growth mindset to a collaborative game development team.

CORE TECHNICAL SKILLS

- **Languages & Scripting:** C#, HTML, CSS
- **Engines & Editor:** Unity3D, Unity2D, Unity Editor, Shader Graph, Animator Controller, Visual Scripting, Unity Input System, Unity Version Control
- **Gameplay Systems:** Gameplay Programming, Game Prototyping, Physics-Based Mechanics, Procedural Generation, A* Pathfinding, Object Pooling, Finite State Machines, Event-Driven Architecture, SOLID Principles, Game UI/UX, Level Design
- **Design Patterns:** Singleton, Observer, Abstract Factory, State Machine, Scriptable Object (data-driven)
- **Tools & Platforms:** Visual Studio, Git, GitHub, Photoshop, Figma
- **Soft Skills:** Leadership, Team Collaboration, Problem Solving, Communication, Rapid Prototyping

PROJECTS

Maze of the Hollow | [View Project](#)

2026

Unity2D | C# | A* Pathfinding | Procedural Generation | Object Pooling | AI

- Implemented recursive backtracker algorithm for perfect maze generation across configurable grid sizes up to 30×30, sustaining 80–100 FPS in both Unity Editor and standalone build.
- Engineered object pool managing runtime instantiation of ghosts, keys, and all dynamic pickups — eliminating per-frame allocation and maintaining stable frame rate throughout gameplay.
- Developed custom A* pathfinder (open/closed sets, g+h→f cost scoring, h-based tie-breaking) operating on a grid graph with dynamic wall data for accurate, real-time enemy navigation.
- Wrote grid/cell data structure supporting wall removal in four cardinal directions and neighbor querying, serving as the shared backbone for pathfinding, spawning, and maze generation.
- Created quadrant-aware spawning framework using abstract base class and overrides for deterministic yet randomized placement of pickups and AI agents, applying SOLID single-responsibility design.
- Engineered enemy movement system with object-pooled instances, path caching, target re-evaluation every ~0.5s, and smooth cell-center interpolation for predictable, fluid AI behavior.
- Built game state and UI synchronization layer using Singleton pattern with direct references, maintaining clean separation between gameplay logic and interface feedback.

Kitchen Chaos (Time-Based Cooking Simulator) | [View Project](#)

2024

Unity3D | C# | Scriptable Objects | Event-Driven Architecture | Unity Input System | FSM

- Implemented interface-driven interaction system (IInteractable, IKitchenObjectParent) to fully decouple player actions from game objects, enabling extensible item behavior with zero coupling.
- Built data-driven item and recipe definitions using Scriptable Objects, supporting rapid content iteration without code changes — a key SOLID open/closed principle application.

- Architected event-based state management using C# events for UI updates, order queue transitions, and win/lose conditions, reducing inter-system dependencies.
- Implemented player input abstraction using Unity Input System for platform-agnostic, modular control handling supporting remappable actions.
- Designed modular object parenting system enabling seamless item transfer between player, counters, and processing stations, managed through a finite state gameplay loop.
- Bound UI components directly to gameplay events for real-time order queue rendering and countdown timer feedback with zero polling overhead.

2D Procedural Maze Generation | [View Project](#)

2025

Unity3D | C# | Coroutines | Recursive DFS | Event-Driven Design

- Developed Unity C# maze generator using recursive depth-first search with coroutine-based step visualization, enabling real-time algorithm demonstration for configurable grid sizes.
- Applied event-driven design pattern to fully decouple rendering logic from generation logic, achieving clean single-responsibility separation between systems.
- Built interactive UI controls supporting real-time parameter adjustment (grid size, speed), with immediate visual feedback on generation output.

Ice Runner (Prototype) | [View Project](#)

2024

Unity3D | C# | Rigidbody Physics | Game Manager Pattern | TextMeshPro

- Developed physics-based movement system using Unity Rigidbody component and C# to produce responsive, momentum-driven player controls with realistic inertia.
- Engineered modular collision detection system handling obstacle interactions, Game Over state triggers, and level boundary enforcement via event dispatch.
- Implemented dynamic real-time scoring system tracking spatial displacement and survival time, rendered live via TextMeshPro UI binding.
- Built centralized Game Manager handling core gameplay loop: scene transitions, state persistence, and automatic level restarts.

EDUCATION

Federal University of Oye-Ekiti

Ekiti State, Nigeria.

Bachelor's Degree in Electrical and Electronics Engineering

June, 2025

Relevant Coursework: Data Structures & Algorithms, Object-Oriented Programming, Computer Programming, Digital Systems Design

LEADERSHIP & VOLUNTEERING

President — Impact Leaders Club, FUOYE Chapter

Oct., 2024 to Oct., 2025.

- Led a chapter of student leaders, coordinating team projects, driving community initiatives, and managing operations across multiple working groups.

Asst. Director, Projects and Operations — Impact Leaders Club, FUOYE Chapter

Dec., 2023 to Oct., 2024

- Planned and executed club projects and operational activities, developing cross-functional coordination and stakeholder communication skills