

ZEN HAMAM

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[Projects](#) | [Linkedin](#) | [GitHub](#)

Junior Gameplay / Systems Programmer with a **BSc in Game Software Engineering**, specialising in **C++ gameplay systems**, engine-level programming, and **Unreal Engine 5** development. Experienced in building modular **game systems**, **custom engines**, and **replicated gameplay features**. Strong foundation in **OOP**, **state machines**, and **performance aware design**, with a focus on clean, maintainable code and playable features. Fluent in **English, Italian, and Arabic**.

TECHNICAL SKILLS

- **Languages:** C++, C#, Python, JavaScript
- **Frameworks/Engines:** Unity, Unreal Engine 5, OpenGL, **SDL2** (engine development)
- **Tools:** Git, GitHub, Debugging, **version control**, Agile / iterative development
- **Gameplay & Systems:** OOP, State Machines, **Multiplayer Replication fundamentals**, Data driven design, Input systems, Collision & physics handling, Gameplay programming

PROJECT EXPERIENCE

Rum Runner's Revenge — C# | Unity | [Playable Demo](#) & [AI scripts](#)

- Contributed to a 2D pirate-themed action RPG developed by a **team of 11 over 3 months**.
- Designed and implemented enemy AI using a **custom finite state machine**, managing patrol, chase, and attack behaviours.
- Developed physics-based gameplay systems, including a **collapsing bridge** and **in-game mini-map**.
- The project was nominated for the **TIGER Game Award** at Bournemouth University.

2D Arcade Game Engine — C++ | SDL2 | [Project Link](#)

- Built a modular **2D game engine** with systems for rendering, **collision detection**, and input handling.
- Designed reusable architecture using **OOP principles** for maintainability.
- Implemented sprite batching and modular systems to **improve performance** and scalability.

Aura Multiplayer RPG — C++ & Blueprints | Unreal Engine 5 | [Project Link](#)

- Developed a **replicated multiplayer** gameplay system supporting synced movement and interactions.
- Built UI elements and input mapping, integrating **C++ and Blueprint logic**.
- Implemented state driven behaviour for consistent, **predictable gameplay flow**.

EDUCATION

- **BSc (Hons) Game Software Engineering** — Bournemouth University (2021–2025)
Key modules: **AI Systems**, Game Programming, Software Design, **Physics Simulations**