Mohamed Khalil Mzoughi

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Education

TEK-UP Private College of Engineering & Technology	**Sep. 2024 – Present**
Bachelor of Engineering (B.E.) in Computer Engineering	*University in Tunisia*
Institute of Arts and Multimedia Manouba	**Sep. 2021 – May 2024**
Bachelor's Degree in Video Game Development	*University in Tunisia*
Institute of Arts and Multimedia Manouba	**Sep. 2020 – May 2021**
Associate Degree in Multimedia Communication	*University in Tunisia*

Experience

Lanterns Studio — **Jan. 2024 – June 2024**
Game Developer Intern — *Charguia, Tunis*

- Developed a narrative-driven cooperative split-screen game using Unreal Engine, employing both **Blueprint** and **C++**.
- Refined animations using Blender, ensuring smooth root motion and in-place animation integration.
- Optimized game performance using **LODs** and **Nanite**, reducing runtime errors and improving rendering efficiency.
- Managed development milestones and task allocation to meet project deadlines.

Independent Game Developer — **May 2023 – Nov. 2023**
Freelance — *Remote*

- Designed and developed interactive PC and mobile games using **Unity** and `C#`.
- Collaborated with team members using **Git** for version control and task management.

Projects

Online Multiplayer Pong | *C++, SDL2, WinSock API* — **Feb. 2025 – Present** ⬛ GitHub

- Developed a local and online multiplayer Pong game using **C++** and **SDL2** for rendering and input handling.
- Implemented a **client-server architecture** using **TCP/IP** to synchronize game states across networked devices.
- Designed and optimized **physics-based ball-paddle collision** with dynamic angle reflections and real-time score tracking.
- Enhanced performance with **multi-threaded game loops** and frame-rate control for a smooth experience.

Chess | *C#, Unity* — **May 2024 – Present** ⬛ GitHub

- Developed a functional chess game with standard gameplay mechanics.
- Implementing matchmaking and game lobby systems.
- Applied SOLID principles and design patterns to enhance maintainability.

2D Action Game | *C#, Unity* — **June 2024 – Present** ⬛ GitHub

- Developed a performance-optimized 2D game with mouse-based movement and shooting mechanics, enhancing interactivity and responsiveness.
- Implemented object pooling for efficient projectile and enemy management, reducing memory usage and improving performance.
- Designed AI-driven enemy behavior with intelligent targeting and dynamic difficulty scaling, creating a progressively challenging experience.

Advanced Character Mechanics | *Unreal Engine, Blueprint, MetaHuman* — **Oct. 2023 – Present** ▶ Youtub

- Developed a **third-person character system** with locomotion, climbing, vaulting, ladders, and cover mechanics.
- Implemented **fall damage** and **camera-aligned movement** for fluid character control.
- Used **MetaHuman** for character models and integrated animations from Mixamo and Unreal Marketplace.

Technical Skills

Programming Languages: C/C++, `C#`, Python, Java, SQL, HTML/CSS
Game Engines: Unity, Unreal Engine
Software & Tools: Visual Studio, VS Code, Git, Blender
Languages Spoken: Arabic, English, French