Mahdi IKKEN

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Professional Experience

Gameplay Programmer - Unreal Engine
March 2024 - Present

Byzantian Interactive, Inc
Remote-Helsinki-Finland

Lead Gameplay Programmer - IP
March 2024 - Present

- Led a team of programmers thoughout the developement process while keeping communication between different departments of art and programming
- Designed and optimized Enemy Horde Mechanics using AI Behavior Trees, Blackboards, Tasks, Decorators and Services
- Created scalable enemy systems allowing individual AI entities to utilize unique abilities
- Implemented numerous abilities, buffs and debuffs for bosses using unreal engine's Gameplay Ability System
- Integrated interactive Dialogue System and experimented with Smart Object SubSystem for environmental interactions
- Developed and documented maintainable C++ and Blueprint systems for consistent performance
- **Tools and Technologies:** Unreal Engine, Blueprints, C++, Git

Gameplay Programmer - Unreal Engine
Jan 2023 - February 2024

Lanterns Studios
Tunisia

Gameplay Programmer - The Perfect Run
November 2023- February 2024

- Developed comprehensive Interaction System using interfaces and blueprints for immersive environmental engagement
- Designed and implemented AI Combat systems and Horde mechanics featuring sophisticated behavior tree architecture
- Created physics-based boss battle mechanics with specialized behaviors and real-time responses
- Programmed advanced ability systems with integrated Enhanced Input System for responsive controls
- Produced detailed technical documentation for all implemented systems, ensuring knowledge transfer
- **Tools and Technologies:** Unreal Engine, Blueprints, C++

Backend and Gameplay Programmer - Verse Estate
January 2023 - November 2023

- Implemented multiplayer Physics-based Air Hockey gameplay compatible with both Desktop and VR platforms
- Utilized Physics constraints for realistic object manipulation and interaction in VR environments
- Developed synchronization systems for real-time media streaming across networked environments
- Researched and documented cloud-based solutions (AWS GameLift, Azure PlayFab, EOS)
- Coordinated with design team using Figma to create intuitive UI/UX for immersive experiences
- **Tools and Technologies:** Unreal Engine, Blueprints, C++, AWS GameLift, Azure Playfab, Figma
  Client Website: Verse Estate , Epic Games Page: Verse World

VR Gameplay Programmer
January 2022 - September 2022

Lanterns Studios
Tunisia

End Of Studies Internship - VR Pool
January 2022 - September 2022

- Developed multiplayer Pool game with dedicated server architecture
- Programmed advanced physics-based grab system for realistic object manipulation
- Integrated custom physics solutions to enhance realism and player experience
- Created comprehensive documentation for all implemented technical systems
- Optimized performance for consistent framerate in VR environments
- **Tools and Technologies:** Unreal Engine, Blueprints, C++

Personal Projects

MultiPurpose AI   January 2025 - Present
Github - MultiPurpose AI

To make the implementation of AI and horde system more forward and easy to start, I have decided to start this project that showcases the use of the Factory Design Pattern to Facilitate creating horde of different enemies that can be setup via a data asset and spawned via an Actor place in the world and will act as a manager. This Manager will take care of the choreography of the combat using the Strategy Design Pattern.

- Implementing Factory Design Pattern for efficient AI system creation and management
- Developing a centralized AI Manager for coordinating complex horde behaviors using Strategy Design Pattern
- Creating data-driven AI configuration system using customizable Data Assets
- Designing modular behavior trees and subtrees for varied enemy types and responses
- **Tools and Technologies:** Unreal Engine, C++, Blueprints

Personal Hack 'n' Slash Game   November 2024 - Present

As a Passionate Game Developer, I've decided to test myself and develop my own game with a focus on implementing robust systems that could translate to real-world applications in simulation and control.

- Architected object-oriented class structure for scalable gameplay systems
- Implemented attribute system using Gameplay Ability System (GAS)
- Developed physics-based combat mechanics with responsive feedback
- Created Gameplay Effects system for dynamic ability interactions
- **Tools and Technologies:** Unreal Engine, Blueprints, C++

Education

ESPRIT School Of Engineering   Tunis, Tunisia
Software Engineering Degree   *2016 - 2022*

Skills

Programming: C++, C#, JavaScript
Game Development: Unreal Engine (UE4/UE5), Unity Engine, Gameplay Ability System (GAS)
AI Systems: Behavior Trees, Blackboards, State Machines, AI Perception
Physics: Physics Constraints, Custom Physics Solutions, Collision Systems
Networking: Multiplayer Architecture, Client-Server Model
Developer Tools: Visual Studio, VS Code, Azure, AWS
Source Control: Git, GitLab, Perforce, CI/CD pipelines
Robotics: General knowledge of ROS and ROS2 architecture
Methodologies: SCRUM, SCRUMban

Interests

Art: Character Concept, 3D modeling, Environment Concept
Video Games: FPS, MMORPG, Card Games
Others: Robotics, Simulation, Autonomous Systems

Languages

Arabic: Native
French: Advanced
English: Advanced