

Mian Mohammad Shah

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PROFILE

MSc Game Development student at Kingston University with a focus on AI-native game design, LLM-integrated mechanics, and intelligent runtime systems. Experienced building data-driven architectures, ML pipelines (Python/TensorFlow), behaviour-tree AI, and experimental agent-inspired decision systems across Unity (C#), Unreal (C++), and Python. Keen interest in the intersection of AI and interactive media.

EDUCATION

MSc Game Development — Kingston University, UK (2025–2026)

Modules: Machine Learning & Deep Learning, Connected Games Development, 3D Games Programming, Digital Studio Practice

BSc Computer Science — Bahria University, Pakistan (2019–2023)

EXPERIENCE

Unity Developer | National Aerospace Science & Technology Park (NASTP) Rawalpindi, Pakistan (Hybrid) | Dec 2023 – May 2024

- Developed Computer Based Training (CBT) simulations in Unity, implementing keyframe animations, vehicle mechanics, and level design for interactive training scenarios.
- Delivered cross-platform builds for PC, WebApp, and mobile/tablet, ensuring consistent performance and UX across deployment targets.

Python Developer Intern | Arbisoft Islamabad, Pakistan (Remote) | Aug 2022 – Sep 2022

- Managed GitLab repositories and CI workflows, coordinating code reviews and merge requests across the team.
- Built Python scripts for web scraping and employee dataset extraction; created analytical dashboards using Google Data Studio.

PROJECTS

Spell Conjurer — AI-Driven Runtime Prototype | Lead Programmer [Unity, C#, Roslyn, JSON, LLM]

- Designed an AI generation pipeline integrating LLM-based code synthesis — users describe a spell in natural language and the system produces valid, compilable C# implementing the ISpell interface contract.
- Built runtime C# compilation via Roslyn with semantic analysis, sandboxed execution (blocked System.IO/Net namespaces), per-spell memory caps, and timeout enforcement on separate threads for safe dynamic loading.
- Created JSON-driven modular spell definitions (metadata, costs, cooldowns, source code) enabling rapid data-driven ability prototyping without recompilation.

Machine Learning Forecasting Project | Developer [Python, TensorFlow, NumPy, Pandas]

- Trained and evaluated Neural Networks, CNNs, and LSTMs for time-series forecasting with a full preprocessing pipeline including normalisation, feature engineering, train/validation/test splits, and data augmentation.
- Implemented model comparison framework with metrics (MSE, MAE, R²) and visualisation of predictions vs actuals; iterated on hyperparameters and architectures to improve forecast accuracy.

Nox — Intelligent Enemy AI System | Gameplay Programmer [Unity, C#, Photon PUN, NavMesh]

- Implemented custom behaviour tree AI with weighted decision-making across Patrol, Investigate, Hunt, and Search states; agents maintain memory of last-known player positions and coordinate multi-agent hunting strategies.
- Built audio-based detection system calculating sound propagation through the environment — enemies respond to varying noise intensity and direction, creating adaptive and unpredictable threat behaviour.

Core Hunters — Procedural & Data-Driven Systems | Gameplay Programmer [Unity, C#, Procedural Gen]

- Developed constraint-based procedural generation algorithm with weighted room selection, connectivity validation, and budget-based encounter scaling — encounter difficulty adapts to progression depth and room size.
- Designed data-driven upgrade synergy system using tag-based multipliers creating emergent build variety.

Umeed — Emergent Narrative Systems | Lead Programmer [Unity, C#, Scriptable Objects]

- Architected interconnected character attribute system (health, morale, skills) producing emergent storytelling. Hope as a dual resource/modifier drives branching narrative events, NPC behaviour, and community dynamics.

Cog in a Machine — Game Jam 2025 | Team Developer [Unity, C#]

- Built a playable prototype in 72 hours at Kingston University Game Jam; collaborated via Git with agile workflows and cross-discipline team communication.

TECHNICAL SKILLS

Languages: Python, C#, C++

AI / ML: TensorFlow, Neural Networks, CNNs, LSTMs, LLM Integration, Behaviour Trees, Agent Systems

Runtime & Data: Roslyn Compiler API, JSON Pipelines, Data-Driven Architecture, Scriptable Objects

Tools & Engines: Unity, Unreal Engine, Photon PUN, NavMesh, Git

Practices: Rapid Prototyping, Modular Architecture, System Design, Profiling & Optimisation

ADDITIONAL SKILLS

Strong problem-solving and debugging mindset

Ability to quickly learn new systems, tools, and workflows

Clear communication within multidisciplinary teams (design, art, audio)

Good understanding of gameplay iteration and feedback-driven development

Experience working with version control (Git) in collaborative environments

Strong time management and ability to meet deadlines