

Sandra Ciudad Moreno

Unreal / Unity Developer · XR · Simulation · Real-Time 3D

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PROFESSIONAL PROFILE

Unity/Unreal Developer specializing in simulation, XR, serious games and real-time 3D, with 3+ years building interactive systems in Unreal Engine, Unity, C#, C++, Blueprints and Blender. Experience in traffic simulation, digital twins, virtual SCADA, industrial VR for Meta Quest 3 and complete games, including an ADHD diagnosis support serious game awarded Honors Distinction.

EDUCATION, CERTIFICATIONS AND LANGUAGES

Dual Master's Degree in Video Game Development and Mixed Reality (Unity & Unreal Engine) — Tokio New Technology School, 2024-2026

Bachelor's Degree in Computer Engineering — University of Castilla-La Mancha, 2019-2024

Certification — Unity Certified User: Programmer (Certiport)

Languages — Spanish native · English B2 · German basic

TECHNICAL SKILLS

Engines & XR: Unreal Engine, Unity, Meta Quest 3, OpenXR, XR Interaction Toolkit, UMG, Blueprints.

Programming: C#, C++, Python, Java, JavaScript, TypeScript, HTML, CSS.

Simulation & Real-Time 3D: Traffic Simulation, Digital Twins, SCADA, External Data Integration, Operator Training, Real-Time Systems.

3D & Optimization: Blender, LODs, Decimate, Mesh Joining, Occlusion Culling, Light Baking, URP, Materials and Textures.

Gameplay & Software: AI, Behavior Trees, NavMesh, Save Systems/Checkpoints, Interaction, Photon PUN Multiplayer, UI, Debugging.

Tools: Visual Studio, VS Code, Git, GitLab CI/CD, Docker, Jenkins.

PROFESSIONAL EXPERIENCE

3+ years in Unity/Unreal, combining professional simulation/XR development with complete personal projects.

Sener — Unreal Engine: Simulation Developer

- Developed a modular UE5 simulation and georeferenced visualization platform for infrastructure, enabling scenario integration through reusable components and a portable architecture.
- Implemented a real-time traffic simulation system in C++, improving operational realism through curvature-based speed control, vehicle gap management, priority lane-changing behavior and external data integration.
- Integrated simulated road equipment — CCTV/PTZ cameras, variable message signs, traffic lights and barriers — with a real-time synchronized virtual SCADA layer to support training, maintenance and operational validation.
- Built emergency scenarios for tunnel priority-response protocols, coordinating incident logic, automated response and system behavior visualization.

Maedcore — Unity: VR Developer

- Optimized industrial models for Meta Quest 3 in Unity and Blender, improving performance while preserving visual quality through geometry reduction, LODs, mesh joining, materials and textures.
- Improved the fluidity of industrial VR experiences by applying URP Simple Lit, mesh compression, Quality Settings, static lighting, light baking, Occlusion Culling and asynchronous loading.
- Developed custom views, information panels and model activation logic to streamline immersive navigation across domes, tanks and industrial infrastructure.
- Detected and fixed XR and Meta Quest 3 APK build issues, including black screens, focus loss, performance problems, vehicle pathing and UI behavior.

Personal projects: Unity & Unreal Game Developer

- Designed and developed complete games in Unity and Unreal, taking features from concept to playable versions through combat systems, AI, navigation, UI, inventory, save systems and checkpoints.
- Implemented gameplay systems in C#, Blueprints and C++ using tools such as Cinemachine, Photon PUN, XR Interaction Toolkit, NavMesh, Behavior Trees, UMG, SaveGame and Niagara.
- Documented and published projects on portfolio/GitHub, demonstrating end-to-end development: architecture, programming, visual integration, debugging, optimization and testing.

RELEVANT PROJECTS

Drive Traffic Simulation — UE5, C++, simulation, SCADA, digital twins: modular traffic and road infrastructure system for real-time visualization, training and operations.

ADHD Diagnosis Support Serious Game — Bachelor's Final Project, Honors Distinction: designed an interactive experience for children and adolescents with mechanics aimed at observing attention, impulsivity and decision-making.

Industrial VR Experience — Unity, Blender, Meta Quest 3: optimization and integration of industrial models, immersive views, information panels, APK builds and XR bug fixing.

Maze of Silence — Unreal Engine 5, Blueprints, AI, gameplay: horror/shooter with Behavior Trees, melee combat, stamina, checkpoints, SaveGame, UI and interaction systems.