

Muhammad Sarib

Lead Unreal Engine 5 Developer

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Professional Summary

Lead Unreal Engine 5 developer with seven years in engine, shipping across PC and Steam, mobile (ES 3.1 and Vulkan), Meta Quest VR, and UEFN. Built the gameplay systems and replication for an anime-stylized action title showcased at Tokyo Game Show 2024 and released on Steam. Currently sole UE engineer at SwiftNine in Lahore, setting technical direction, performance budgets, and Blueprint coding standards for mobile titles targeting Android API 26+ and iOS 15+. Blueprint-first by default, drops into C++ when the engine demands it: reading source, exposing native functions to Blueprints, fixing replication topology, and debugging callstacks where Blueprints alone cannot reach.

Technical Skills

Engine and Languages: Unreal Engine 5 (5.0 through 5.7) and Unreal Engine 4 (4.22 through 4.27), Blueprint Visual Scripting (expert), C++ (UE context: source reading, exposing native functions to Blueprints, debugging callstacks, plugging into engine subsystems without Blueprint interfaces), Verse and UEFN, Flutter and Dart.

Gameplay Systems: Multiplayer and replication (RPCs, variable replication policies, network prediction, server-authoritative validation, Online Subsystem Steam), AI (Behavior Trees, EQS, utility-based state machines), Gameplay Ability System, Enhanced Input, character controllers and animation, Blueprint Interfaces and Event Dispatchers, data-driven design (DataTables, DataAssets, Soft Object References), gameplay tags, custom Blueprint nodes, editor utility widgets.

Mobile, VR, and Performance: Android (SDK 26+) and iOS (15+) optimization, mobile rendering on OpenGL ES 3.1 and Vulkan, draw call and overdraw reduction, instanced static mesh batching, texture streaming and LOD authoring, shader complexity profiling, memory budget enforcement, target frame rate stabilization, Meta Quest 2 standalone VR development, per-eye draw call budgets, single-pass stereo rendering, profiling with Unreal Insights, Stat Unit, Stat GPU, and RenderDoc.

Rendering, VFX, and AI Integration: Niagara particle systems and GPU simulation, Material Editor and shader authoring, post-process effects, baked and dynamic lighting, Sequencer and cinematics, NVIDIA Omniverse Audio2Face, Convai SDK for conversational NPCs, Llama LLM integration for in-engine AI, Cesium for Unreal (3D Tiles, Google Photorealistic Tile streaming), pixel streaming.

Tools and Workflow: Perforce (primary VCS), Git, Jira, Confluence, Notion, Slack, Agile and Scrum, CI/CD pipelines, Visual Studio, Rider, Figma (UI/UX handoff), Blender, Adobe Substance 3D Painter, Quixel Bridge and Megascans, Adobe Photoshop, DaVinci Resolve.

Professional Experience

Lead Unreal Engine Developer | SwiftNine LLC (Clutched Studios subsidiary), Lahore, Pakistan, on-site

07/2025 to Present | UE 5.6 to 5.7

Sole UE engineer setting technical direction for mobile titles targeting Android API 26+ and iOS 15+ across the ES 3.1 and Vulkan rendering paths.

- Wrote the Blueprint coding standard the studio runs against, with mandatory review on every merge. Enforced strict use of Blueprint Interfaces and Event Dispatchers to keep gameplay systems decoupled and parallelizable.
- Set per-device-tier draw call budgets and shader complexity ceilings. Every asset and material is profiled against ES 3.1 limits before it enters the build, using Stat Unit, Stat GPU, Unreal Insights, and RenderDoc.
- Exposed C++ engine functions as Blueprint-callable nodes for performance-critical paths where Blueprint dispatch overhead was too high, keeping the boundary between scripted and compiled logic explicit.
- Built the technical interview rubric and hiring pipeline used to evaluate incoming UE developers. Candidates are tested on Blueprint architecture, replication patterns, and live scene profiling against a target device.
- Authored mobile market feasibility reports for studio leadership covering genre viability, four-person team scoping, monetization models, and App Store and Play Store compliance. Five reports written, three greenlit (Multihop and Quizlume both shipped to Play Store and App Store; the third currently in production).

Unreal Engine Developer | Vmmersion LLC, Remote (US-based studio)

04/2024 to 04/2025 | UE 5.5 to 5.6

Engineering on an anime-stylized action title showcased at Tokyo Game Show 2024 and released on Steam.

- Owned the gameplay systems layer in Blueprints: combat state machines, ability pipelines, AI behavior trees, and cinematic triggers. Built for fast iteration so designers could tune combat without engineering recompiles.
- Locked the TGS 2024 demo build at 60 FPS on mid-range PC (i7-14700K, RTX 3060 8GB), cut frame-time hitches by 98%, and reduced load times by 40% by hunting GPU-bound bottlenecks, cutting shader complexity, and clearing overdraw in heavy scenes.
- Wrapped third-party C++ SDKs as typed Blueprint nodes so the rest of the team could call platform APIs without touching native code.
- Migrated asset referencing across the project to Soft Object References and Data Assets, killing the hard-reference chains that were bloating memory and slowing load times.

Senior Unreal Engine Developer | Exarta, Remote

11/2022 to 03/2024 | UE 5.2 to 5.3

Returned at Senior level to fix and scale Web3 and metaverse projects that had stacked up technical debt under earlier teams.

Managed seven direct reports across UE engineering (three) and 3D art (four).

- Broke tightly coupled gameplay systems into modular Blueprint subsystems, unblocking parallel engineering work across the team. Subsystems supported in-flight work on the Exarta Metaverse and a real-time AI assistant character running NVIDIA Audio2Face with a Llama LLM backend in Unreal (see Selected Projects).
- Tracked down and fixed multiplayer replication bugs in the Exarta Metaverse at the source: bad variable replication policies, authority and ownership misconfigurations, and player-state desync. Replaced ad-hoc client logic with proper RPCs and server-authoritative validation, lifting concurrent player capacity from 10 to 40 by reclaiming network bandwidth per client.
- Tightened the rendering pipeline for densely populated metaverse scenes through enforced LOD distances, instanced static mesh batching, and material complexity caps, holding frame rate as scene density grew.
- Owned Exarta's UEFN and Fortnite Creative portfolio across six concurrent titles: Enigmara (fantasy TDM, flagship, ~100 DAU steady and ~200 DAU peak), Exarta HQ (portfolio hub), CR-ICE-IS (Christmas-themed crisis arena), Sands of Glory (Egypt-themed TDM), Clumsy Champions (Fall-Guys-style parkour), and Frightmare (Halloween zombie survival). Managed Verse scripting pipelines within Fortnite runtime constraints. Organized a player tournament on Enigmara with a PKR 100,000 prize pool to drive engagement. Ran Blueprint code reviews for the junior UE developers, focused on tick-cost awareness and converting Tick polling to timer-driven and event-driven patterns. Portfolio at fortnite.com/@exarta. Flagship trailer: youtu.be/dlKow0fpkDE.
- Engineered the Unilever TRESemmé Metaverse, the first beauty-industry metaverse experience in Pakistan, on Unreal Engine. Covered by IGN, BeautyMatter, Happi, and Retail Tech Innovation Hub. Trailer: youtu.be/kASz5P7nAuE.

Unreal Engine Developer | Ideofuzion, On-site, Rawalpindi

06/2022 to 10/2022 | UE 4.27

Fixed-scope contract delivering an NDA-restricted internal Meta Quest 2 standalone VR application within per-eye draw call limits and single-pass stereo rendering constraints.

- Built grab, throw, and UI pointer interaction Blueprints from the ground up, tuned for VR input latency where any perceivable lag breaks immersion.
- Held Quest 2's render budget across three axes simultaneously: under 1M triangles per scene, under 150 draw calls per eye, and under 200 shader instructions per material (down from 1,000-plus baseline). Locked 72Hz stable with a dynamic 120Hz mode for smooth UI animations under reduced asset quality. Achieved through asset streaming, aggressive culling, per-mesh LODs, simple collision, and continuous profiling with stat commands.

Unreal Engine Developer | Exarta, Remote

12/2021 to 05/2022 | UE 4.27 to 5.0

First engagement at Exarta, building the multiplayer and Web3 foundations that the Senior return later scaled.

- Built multiplayer-ready virtual environment prototypes in Blueprints, standing up the replication layer (replicated variables, multicast RPCs, session management) that the later Exarta Metaverse production scaled to 40 concurrent players. Intro: youtu.be/rx054s4OXPM.

- Wrapped Solana REST API calls into async Blueprint nodes, letting designers trigger Solana blockchain interactions in the Exarta Metaverse without touching backend code.

Mobile Application Developer | HashTech Systems Inc., On-site, Islamabad

06/2019 to 07/2021 | UE 4.22 to 4.26 and Flutter

Origin role. Shipped indie UE4 games on Android alongside production cross-platform mobile apps in Flutter, learning the full mobile pipeline from prototype to store submission.

- Built and shipped Flutter applications targeting Android and iOS in parallel, operating under real mobile constraints: GPU budgets, memory ceilings, battery-aware patterns, and platform certification requirements on both stores.
- Owned UE4 Android builds end-to-end: gameplay in Blueprints, mobile packaging, signing, and Google Play submission.

Selected Projects and Technical Showcases

Custom FPS Framework (UE5, Personal portfolio)

AAA-quality first-person shooter controller built from scratch, bypassing Unreal's default Pawn and Character movement entirely. Custom movement (sprint, crouch, slide), procedural recoil, ADS, weapon holster and sway, hit detection, physics object knockback, full VFX and SFX integration. No marketplace templates, no default UE movement components.

Character Creator System (UE5, Exarta)

Runtime character customization with no editor dependency: modular skeletal mesh swapping, groom-based hair, Material Instance Dynamic for skin, eye, and hair color, blendshape morphology (arm length, lip shape, nose size), clothing, decals, scene lighting control, gender swapping, and full save and load profile system. Showcase: youtu.be/HQ1BEmAtTb4.

NVIDIA AI Assistant (UE5, Exarta)

Real-time AI assistant character in Unreal driven by NVIDIA Omniverse Audio2Face for facial animation and lip sync, with a Llama LLM backend generating contextual responses. End-to-end latency tuned for conversational pacing. Showcase: youtu.be/gakXRloKGlw.

Samurai Saga (UE5, Client project, Ethereum)

Third-person open-world multiplayer combat for a P2E title. Built combat systems and replication topology for real-time state sync across players. Multiple NFT-backed character classes (Cyborg Samurai, Kaiju Monsters, Onna-Bugeisha) with class-specific movesets. Project: samuraisaga.com.

Convai NPC Integration (UE5, Personal portfolio)

Conversational AI NPCs in Unreal using the Convai SDK. NPCs hold context-aware dialogue with players, stay within narrative bounds, and trigger in-game actions based on what the player says, without scripted dialogue trees.

Xandar (UE5, Client project, MVP)

NFT turn-based auto battler in the Dota Underlords pattern. Sole developer on the MVP: unit placement, combat resolution, round state machines, and NFT-linked roster management, all in Blueprints. Brought additional engineers up to speed on the codebase as the project expanded. Trailer: youtu.be/qeVS0qnxhMI.

Pose Estimation Bridge (UE5, Personal portfolio)

Python pose estimation pipeline bridged to Unreal through a camera input layer. Webcam capture and Python processing drive a UE5 mannequin in real time, mirroring user body pose. Proof-of-concept for connecting ML frameworks to engine runtime. Showcase: youtu.be/ss7-Cedmu8w.

Education

Bachelor of Computer Software Engineering | Foundation University Islamabad, Pakistan, 2021

Languages

English (C2), Urdu (native)