

SAI BHASKAR BEDATANAPALLI

Game Developer & Systems Engineer · 2D / 3D / XR / VR · Multiplayer & Web Games · Conversational AI

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PROFESSIONAL SUMMARY

Cross-platform Game Developer with 3+ years of production experience in Unity (2D/3D, XR/VR), web games, and a custom C++ OpenGL rendering engine. Specialist in real-time multiplayer, backend-integrated gameplay, graphics pipelines, live-game architecture, and performance optimization. Also builds conversational AI systems — tool-calling agents, guardrail pipelines, RAG-ready knowledge layers, and in-browser vision AI — with production cloud deployments. Proven record shipping scalable titles across mobile, XR, browser, and hybrid native platforms.

TECHNICAL SKILLS

Engines & Platforms: Unity (2D/3D, XR/VR), Custom OpenGL Rendering Engine, Godot, Cocos Creator, Unreal Engine

Game Libraries & Frameworks: PixiJS v8, Phaser, React + Pixi HUD, GSAP, GLFW / GLM / glad, DOTween

Networking & Multiplayer: Mirror, Photon PUN & Fusion, WebSockets, Custom Socket Systems, Socket.io, Server-Driven Outcomes, Beamable

Core Systems & Patterns: Addressables, AssetBundles, Localization, Save/Load, FSMs, Object Pooling, ScriptableObjects, Scene Management, Cinemachine, NavMesh AI, Command Pattern, Profiling & GC Optimization

Languages: C#, C++, JavaScript, TypeScript, GLSL, GDScript, HTML5, CSS3, SQL (Basic)

Backend & APIs: ASP.NET Core (REST), Express.js, HTTP, Firebase (Hosting, Firestore, Analytics), Cloud Functions, Secrets Management, CORS & API Rewrites, MySQL, MongoDB

Architecture & Tooling: SOLID, Event-Driven & Data-Driven Design, Modular Architecture, Event Bus, Clean Code, CMake, Vite, Git, SVN, GitHub Actions CI/CD

Graphics & Optimization: OpenGL 3.3+, Custom Renderer / Camera / Lighting, GLSL, Shadows, WebGL, URP / SRP, Custom 2D Physics, Baked & Real-time GI, Lighting Optimization

XR & Spatial Computing: ARCore, OpenXR, XRI Toolkit, XR Interaction Systems, Text-to-Speech (TTS) Narration

AI, Agents & Vision: Conversational AI, LLM Tool Calling (DeepSeek API), AI Agents, RAG, Guardrails & Safe Tool Use, Prompt Engineering, Convai, Ready Player Me, ARKit Blendshape Lip-sync, In-Browser Vision AI (MediaPipe, OpenCV.js), Web Speech API (STT/TTS)

Monetization & Analytics: IAP, Unity LevelPlay, Google AdMob, Custom Paywalls, Firebase Analytics

Cross-Platform & Web: Capacitor (Web-to-Native), Android Studio, HTML5 Canvas, Browser UI/UX, Responsive Design, Firebase Hosting, GitHub Pages

GAMEPLAY DESIGN FRAMEWORKS & CORE SYSTEMS

- State & Behavior Engines: Player state machines, hierarchical FSMs, and Behavior Tree-driven enemy AI.
- Combat & Damage Pipelines: Modular hitboxes, projectile math, damage mitigation, and extensible ability frameworks.
- Progression & Inventory: Slot-based inventories, drag-and-drop UI, data-driven health/shield/regen, and persistent serialization.
- Turn & Rule Systems: Modular board rules, capture logic, turn evaluation, matchmaking, and server-validated scoring.
- Runtime Resource Pipelines: Addressables/AssetBundles loading and low-allocation pooling to cut GC spikes on mobile, XR, and WebGL.

PROFESSIONAL EXPERIENCE

Game Developer (WebGL Projects)

Present

Kanish Technologies · Bangalore

- Engineer freelance WebGL games and interactive web experiences with PixiJS, Phaser, Unity WebGL, and custom engine setups.
- Architect performant client-side render loops, React canvas HUDs, and Capacitor packaging for hybrid native deployments.

Freelance Game Developer

2 Months

Independent · Indian Army XR Tactical Shooter

- Built an XR multiplayer tactical simulation for an Indian Army project.
- Implemented Mirror dedicated-server networking, synchronized AI combatants, Addressables streaming, and real-time session recording for tactical debriefs.

Game Developer

3+ Years

Gameshastra Private Limited · Hyderabad

- Shipped multiple production 2D and 3D multiplayer titles in Unity across mobile and XR headsets.
- Built modular gameplay systems, UI managers, inventory pipelines, and network sync using Mirror and Photon.
- Profiled draw calls, memory, and CPU bottlenecks to keep stable framerates on target mobile and XR devices.

KEY GAME PROJECTS

XR Multiplayer Tactical Shooter (Indian Army Project)

- XR simulation with Mirror dedicated-server networking, synchronized AI combatants, Addressables streaming, and real-time session recording for tactical debriefs.

Multiplayer Cricket (Mobile)

- Real-time batting, bowling, and fielding with Android-optimized touch controls, state-driven animation, and synchronized network lobbies.

Multiplayer Car Racing

- 10-player real-time racing with custom vehicle physics, AI pathfinding, race-state management, and authoritative server-side lap/rank validation.

Spot the Difference & Mini-Games (Live Monetized)

- Hidden-object mechanics, Addressables content delivery, and a full monetization loop: IAP, Unity LevelPlay, AdMob, and paywalls tracked in Firebase Analytics.

Narrative Branching Story Engine

- Data-driven dialogue and choice-graph engine with character customization, branching storylines, and integrated transactional monetization.

Seven Stones Multiplayer

- Turn-based multiplayer mobile title on Beamable backend with Elo matchmaking, in-game asset shop, and persistent player ranking.

Board Game (Monopoly-Inspired)

- Modular board game with interchangeable environment themes, turn-state management, shop economies, and player progression.

Indian Music Tiles

- Audio-synced rhythm game with precision hit-window timing and regionalized content pipelines for Hindi, Telugu, and Tamil tracks.

AI, WEB & SYSTEMS ENGINEERING

Tool-Calling Website Conversational Agent

- Built a portable site-agent module on the DeepSeek API to answer visitor queries, book Google Calendar events, and route users programmatically.
- Added server-side guardrails: verified booking pipelines (no hallucinated actions), sanitized context, date correction, capped tool rounds, and CORS allow-lists.
- Designed a decoupled KnowledgeProvider for top-k RAG injection without changing core agent orchestration.
- Automated production deploys to Firebase Hosting and Cloud Functions via GitHub Actions, with Google Cloud Secrets management.

Conversational 3D AI Avatars

- Interactive 3D web experience combining Ready Player Me avatars with real-time Convai conversational characters.
- Bi-directional voice/text streaming with TTS playback and ARKit blendshape lip-sync in React Three Fiber.

In-Browser Vision AI (OpenFrame)

- Client-side computer vision for real-time body, hand, and facial landmarks using MediaPipe and OpenCV.js.
- Hardware-accelerated portrait depth-of-field, background replacement, and live face filters with zero backend latency.

Custom C++ OpenGL Rendering Engine

- Standalone graphics engine in C++ with modern OpenGL 3.3+, glad, GLFW, and GLM.
- Phong/Blinn-Phong lighting, dynamic shadow mapping, GLSL shader compilation, extensible camera, and custom 2D rigid-body physics.

EDUCATION

- Bachelor of Arts (Hons.) in Game Art and Design · Digiquest, Hyderabad · 2019 – 2023 · CGPA 8.5
- Intermediate (XII), MPC · Sri Chaitanya Intermediate College, Andhra Pradesh Board · 2019 · CGPA 9.6/10
- SSC (X) · Sri Chaitanya Techno School, Andhra Pradesh Board · 2017 · CGPA 9.7/10

LANGUAGES & CORE COMPETENCIES

Core Competencies: End-to-end system architecture, cross-platform engine engineering, real-time networking, AI agent & RAG pipelines, low-level graphics optimization, rapid prototyping

Languages: English (Professional working proficiency), Telugu (Native)