

Tomek Witczak

SENIOR REAL-TIME / UNREAL ENGINEER | C++ | Simulation | Networking | XR
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PROFILE

Senior real-time software engineer and technical lead with 15+ years in software development, most of it working with real-time 3D and Unreal Engine. My work has covered C++, multiplayer and networking, media and data synchronisation, hardware and SDK integrations, R&D, tooling and CI/CD. I have led small teams while staying hands-on, and I am used to taking unfamiliar technical problems from prototype to a working production solution.

CORE EXPERTISE

Unreal Engine 4/5 • C++ • Real-Time Systems	Networking • Multiplayer • Replication	Data Synchronisation • Hardware / SDK Integration
XR/VR/AR • Media & Video Pipelines	Python Tooling • CI/CD • TeamCity • Perforce	AWS GameLift • Blueprints • R&D • Mentoring

PROFESSIONAL EXPERIENCE

Virtex Entertainment / Zenos Interactive

Mar 2021 – Present

Lead Developer — Dec 2021 – Present • Senior Unreal Developer — Mar 2021 – Dec 2021

- Joined as the company's first permanent Senior Developer and moved into the Lead Developer role later that year. Worked hands-on while helping build and support an engineering team of up to 7 developers.
- Took over an abandoned VLC/Unreal plugin, brought it back to a usable state and fixed a number of stability problems and critical bugs before using it for live-stream playback in Unreal Engine.
- Built a client-side buffering system to keep YouTube/Twitch live streams synchronised between users. Instead of retransmitting video through our own servers, clients buffered the provider stream locally and matched playback to a master timecode sent by the server.
- Reduced the memory cost of the video buffer with ZSTD compression and tested different compression levels to find a practical balance between RAM usage and CPU cost.
- Helped develop and test a multi-user virtual platform that ran stable sessions with around 64 concurrent users.
- Set up and administered TeamCity and Perforce, supporting daily builds and often several build/test cycles in a day. Also wrote Python and Unreal tools for common development and production tasks.
- Wrote AWS GameLift tools that made dedicated-server builds, uploads and testing quicker for the development team.
- Implemented the Unreal-side communication with a third-party football tracking service so live player data could be used inside the virtual stadium.
- Worked on integrations with Vivox, ToxMod and BugSplat.
- Created Niagara Falls, an Unreal Engine plugin that can serialise Niagara Particle Systems to JSON and rebuild them from JSON. The project is being prepared for open-source release.
- Organised daily end-to-end tests and took part in recruitment, code reviews, mentoring and technical/product decisions across the team.

Netspeak Games — Senior Unreal Developer

Aug 2020 – Mar 2021

- Developed mini-games, gameplay features and the project prologue/tutorial using C++ and Blueprints.
- Spent a large part of the role testing and fixing bugs across PC and Android builds, while helping junior developers and other disciplines with Unreal workflows and debugging.

Rewind — Senior Unreal Developer

Feb 2018 – Aug 2020

- Worked across a range of VR, AR and mixed-reality projects, often starting with R&D or a prototype and then taking the technical work through to delivery.
- Built a Mars-themed VR prototype using a backpack VR system and Manus data gloves. Implemented the full interaction flow for picking up a rock and placing it on a scanner, including careful tuning of the glove input and grip behaviour.
- Built a late-join UI synchronisation system for a multiplayer VR showroom. UI actions were recorded and quickly replayed for a new user so their interface caught up with the current shared state almost immediately.
- Was responsible for multiplayer on an 8-user VR experience and wrote a custom Unreal Engine integration for AWS GameLift to handle hosting and sessions.
- Worked on Curfew: Join the Race, including the endless-road system, in-car interactions, timing, remote video playback, visibility-based behaviour and haptics. The project won Gold in the VR Experience Interactive category at AEA 2019.
- Carried out R&D with early WebXR, Azure Kinect, Leap Motion and Manus hardware, and later worked on tools, prototypes and technical scene work for Expo 2020 Dubai.

PlayMagic — Senior Developer (de facto lead responsibilities)

Apr 2017 – Feb 2018

- Worked as a Senior Developer but also handled much of the day-to-day technical lead work, including mentoring junior developers, while remaining hands-on in Unity/C#.
- Implemented new levels and gameplay content, fixed bugs in the existing project and integrated the Samsung Gear VR 3DoF controller.

Goodgame Studios — Game Developer / Unreal Engine R&D

Apr 2013 – Sep 2016

- Started on a browser-based 3D project using Flash/Molehill and later Away3D. After the main programmer focused on editor development, I took responsibility for most of the core gameplay loop and later helped with the move toward mobile.
- Integrated Robotlegs into the project and did R&D around 3D rendering, physics and performance on the browser and mobile targets.
- Took part in engine evaluation for a new AAA project and built a technical demo in CryEngine before the studio chose Unreal Engine.
- Proposed and implemented an OpenAL-based audio solution for Unreal Engine. Also researched early UMG and Bink/CRI video playback, introduced level-streaming workflows, and wrote tools to connect the studio localisation system to Unreal.

SELECTED INDEPENDENT PROJECTS

Spring86 Limited — Founder / Independent Real-Time Developer (part-time)

Jun 2025 – Present

- Run a small independent studio alongside full-time employment, handling the technical work from initial implementation through optimisation, QA, packaging and release.
- Independently shipped GreenGrass on Steam and Meta PC VR and CelestiaVR on Meta Quest/PC VR.
- Current Unreal work includes autonomous economy/worker systems, custom grid navigation, save/load, game-time scheduling and Steam Deck UI/input work.

EARLIER CAREER

Forever Entertainment — Game Developer (2011–2012): developed mini-games for Teddy Floppy Ears titles and later took ownership of a partially completed internal engine after the lead programmer left, stabilising the codebase while continuing delivery.

SinnerStudio — Flash / Web Developer (2009–2011): websites, interactive Flash content and small Facebook games using HTML, CSS, PHP and ActionScript.

Combidata — Flash Developer (2008): interactive educational materials in Flash for ZUS.

EDUCATION, LANGUAGES & LINKS

School of Management in Gdansk — Computer Science (studies commenced 2008)

Polish: Native • English: Advanced • French: Basic • German: Basic • Microsoft Certified Professional (MCP) • Cambridge FCE

GitHub: github.com/kamesenin/Rook • github.com/kamesenin/UMC