# R.J. THOMPSON

Engineering lead: architecture, teams and shipping under deadline

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Sample work and experiments: rj45thompson.github.io/anchor-demo

## SUMMARY

Engineering lead with 30 years in software. Software development lead at Finger Food Studios (Skylanders, Star Wars BB-8, Call of Duty) and development team lead at Microsoft Big Park (NFL, ESPN, UFC); team lead with hiring and training responsibility at Neoteric and Max Integration; mentor to developers at BioWare and on Activision's Call of Duty team; currently lead developer on a game contract. Owns architecture, ships under deadline, and brings teams onto unfamiliar engines fast.

## EXPERIENCE

**Lead Developer**, Independent game studio (contract) 2025 - present

- Built the level and terrain editor and the pipeline tooling in Unity and C#: terrain sculpting and splat painting, prop snapping against colliders, an eighteen-state tile system and biome palettes.
- Built the tactics camera and battle cinematics: best-angle turn camera, blend tables, dolly tracks, handheld noise and impulse, and a per-beat camera editor for cutscenes.
- Built a Unity to Unreal Engine 5 VFX conversion tool for a port pilot; all 65 particle emitters convert to Niagara. Reported that the structure ports and the look does not, rather than calling it done.
- Verification without opening the editor: NUnit suites run headless, a console gate fails a change on new errors, and a check-in gate blocks any asset committed without its metadata file.

**Artificial Intelligence Researcher**, TNT (self-employed) Jan 2024 - present

- ARC3, a knowledge engine answering from a graph with a measured confidence and a refusal when the evidence runs out: 66.4M facts over 12.2M subjects, no neural weights, runs in the browser.
- Reported a retraction as the finding: a constant-guess baseline passed the same verification gate at 88.9%, so a reported 55/55 result was mostly base rate.
- Job Desk, a Claude-backed web application with a Python backend, held to 88 automated tests; running it for real surfaced a tool-access problem and a sign-in flaw, each closed and guarded by a regression test.

**Assistant to Lead Developer**, Utherverse Jan - May 2025 (contract)

- Oversaw daily operations of the virtual world platform, coordinating cross-functional teams.
- Managed staffing: hiring, training and performance evaluations.

**Senior Software Engineer**, BioWare May - Aug 2024 (contract)

- Shipped the dialog and narrative system for **Dragon Age: The Veilguard** on Frostbite.
- Mentored developers on the Frosted cinematic and narrative system through the final push to ship.

**Senior Software Engineer**, Eden Industries Feb 2022 - Dec 2023

- **Activision, Call of Duty**: shipped a new live ops system; mentored junior developers and helped architect interop COM bridges for Android and iOS.
- **Operation Tango**: ported low-level networking and real-time voice chat to **Nintendo Switch**, and fixed real-time chat and Photon networking faults.
- **Kabam, Disney Mirrorverse**: debugged and fixed difficult low-level threading and networking issues.
- Integrated third-party libraries including Vivox, Photon and OpenCV (chat, video and computer vision). C++ and Unity on Switch, Android and iOS.

**Software Developer**, SEGA (Relic) Jan 2021 - Jan 2022

- **Company of Heroes 3**: brought on to optimize WPFG, a port of WPF running on C++ rather than C#. Increased performance by up to **7%**.
- Identified and fixed major process issues, improving the team's velocity by **10%**.
- Built the front-end UI and loadout system, implemented the HUD for terrain and unit indicators, and architected an improved UI API for the engine.
- Wrote build tools for Perforce and the pipeline's hot-reload functionality.

**Senior Software Developer**, Electronic Arts Oct 2016 - Sep 2020

- Four years on the Frosted editor for Frostbite, across the Editor Frameworks, Cinematics, Schematics and Lighting Workflows teams.
- Core editor work: WPF and threading issues, docking, and performance and memory profiling.
- Architected MVVM upgrades to the legacy visual coding diagram library; wrote a crash control and recovery application; added Azure telemetry metrics and helped with the dashboard.
- Helped architect the keyframe editor, and wrote the artist-facing playback, rewind and preview HUD controls for cinematics, plus grouping and video controls.

**Software Development Lead**, Finger Food Studios Apr 2015 - Sep 2016

- Led the team across **Skylanders**, **Star Wars BB-8**, Call of Duty and MaxPlay, and the studio's move to Unity.
- Developed proprietary non-uniform animation scaling that kept character rigs compatible with the consoles' Havok engine; accelerated Skylanders asset-bundle loading by **200%**.
- Architected and shipped Skylanders Imaginators on iOS and Android in Unity; held 30fps on low-end mobile devices.
- Architected n-tier real-time communications with consoles over Windows Universal Async Winsock and low-level TCP/IP. Wrote a 3D math library in JavaScript on Node.js and Electron.

**Development Team Lead**, Microsoft (Big Park) Apr 2013 - Aug 2014

- Complex real-time Lua UI for the Xbox One NFL, ESPN, UFC and Bonnaroo apps.
- Built a system visualizing NFL players' positions from helmet telemetry and GPS.

**Software Developer**, Novadaq Technologies Apr 2012 - Apr 2013

- Lead developer and architect of the Cinevaq 2.0 (**SPY ELITE**) product line, a regulated surgical fluorescence-imaging device, in C# with C++ video libraries.

**Software Developer**, Neoteric Technology Jul 2004 - Jun 2010

- Built UI libraries from the ground up with the Win32 API in C++, over an n-tier backend.
- Led a team of four and was responsible for hiring and training. Owned UML design documents, test plans and automated test suites.

**Earlier:** Industrial Alliance, architected Unification in .NET/WPF/WCF (2014-15) · FinancialCad, lead architect of the Silverlight/XNA presentation layer (2010-12) · Max Integration, project lead on a Win32 CRM, team of six (2004) · RedHawk Gaming, gaming subsystems and low-level device drivers (2001-03) · Infowave, QA lead of five (1997-2001) · Electronic Arts, QA on NHL 98, Need for Speed and Warcraft II (1996-97)

## SKILLS

**Languages:** C++ (11/14/17), C#, Python, Lua, JavaScript, SQL

**Engines and frameworks:** Frostbite, Unity, Unreal, Essence, Havok, .NET, WPF/XAML, MVVM, Win32

**Machine learning:** PyTorch: convolutional and self-supervised models, graph neural networks, mixture-of-experts; CLIP and vision-language feature extraction

**Systems:** multithreading and debugging, low-level networking (sockets, TCP/IP), profiling and optimization, real-time systems, n-tier and event-driven architecture

**Tools:** Perforce, Git, Jenkins, Azure DevOps, Visual Studio

## EDUCATION

**BCIT**, .NET High Tech Professional Software Systems Development, 2003-2004 · **Advanced C++**, 1999-2001 · **WSA Consulting**, UML (Unified Modeling Language), 2000 · OO techniques, building large-scale applications, development testing and automation tools, 1998-2001