Gareth Falkingham

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Summary

Accomplished Technical Director, CTO, and Systems Architect with 14+ years of experience leading engineering teams, shipping video-game titles to over 150M players, and architecting award-winning software systems.
Recognized for bridging spatial computing and real-time graphics with commercial outcomes, from a 25% increase in ARPPU to software for TIME's Best Inventions of 2024.

Core Competencies

Leadership & Process

Direct engineering management (1-on-1s, performance reviews, PIPs), cross-disciplinary alignment, and pragmatic Agile implementation ('what the team needs' not 'what the book says'). Strong emphasis on mentorship and tailored communication across technical and non-technical stakeholders.

Technical Focus Areas

- **Primary Framework:** *Unity3D (C#)* - Cross-platform architecture, mobile/console development, live operations, multiplayer R&D, tools development, optimization, and memory management.
- **Spatial Computing & Graphics:** 3D & 4D Gaussian Splatting, Augmented and Virtual Reality (AR/VR), Real-Time Web 3D (PlayCanvas)
- **Languages & Ecosystems:** C#, C++, Python, TypeScript/React, Lua, AWS, CI/CD

Employment History

Independent Freelance Consulting — *Remote Contract*

Principal Technical Consultant — *2021 - Present*

Short-term hourly contracts involving strategic technical consulting and software architecture advice for various clients. Key clients include:

- **NewCanvas: Coltrane**: Technical Director for VR narrative experience for pre-launch hardware (PICO Space Pro). Developed 4DGS wire format that optimized download sizes by 70%.
- **Bennett Racing Simulations: Dirt Trackin' 3**: Took over a large code base for a mobile game: Overhauled AI, User Experience, Balancing, Tools, CI, and modernized to platform requirements. Heavily optimized a high fidelity racing simulator for mid-range Android phones.
- **Aescape: Robot Massage Table**: Architected the initial visual prototypes and embedded C# ROS interface for a multi-axis robotic massage system. Product awarded TIME's Best Inventions of 2024.

SiteState — *Full Time Remote*

CTO & Co-Founder — *May 2024 - Present*

- **Product Innovation & Metrics:** Engineered a guided ARKit space-capture flow that enables untrained users to successfully capture full homes on their phones in a single attempt, achieving a 43% signup-to-successful-capture conversion rate.
- **End-to-End Pipeline:** Architected the full-stack infrastructure converting smartphone AR scans into photorealistic 3D Gaussian Splatting assets, automatically outputting walkable tours, flythrough videos, and listing photos for real estate clients.
- **Tech Stack:** Unity, ARKit, Gaussian Splatting, Python, PlayCanvas, React, AWS, Unreal

Playmake *Full Time Remote*
Technical Director *August 2021 - May 2024*

- **Scale & Platform Breakthroughs:** Led engineering across titles reaching 150M+ cumulative players. Delivered optimized visual fidelity on Roblox by isolating counter-intuitive physics bottlenecks.
- **Monetization & Retention:** Architected live-ops features for *Murder Party (Roblox)*, achieving **best-in-platform** retention and driving a **25% increase in ARPPU**.
- **Team Growth & Direction:** Built and structured the engineering hiring process (coding assessments, interviews), directed gameplay execution for multiple titles, and mentored technical staff.

PikPok *Wellington, New Zealand*
Technical Manager *May 2020 - August 2021*

- **Engineering Management:** Managed performance reviews with clear goal-setting, regular 1-on-1s, and resolved complex team conflict scenarios.
- **Recruitment & Onboarding:** Conducted technical interviews and onboarded new engineers.
- **Mentorship & Performance:** Delivered regular technical training for junior programmers. Coached an underperforming engineer through a PIP to successful team reintegration.

Lead Game Programmer *February 2017 - May 2020*

- **Technical Leadership:** Directed technical teams for multiple projects in various stages of development, spanning early pre-production to multi-year live-ops.
- **Core Systems Architecture:** Engineered scalable, reusable Unity frameworks and core engine packages adopted studio-wide.
- **Key Projects:**
  - **Into the Dead: Our Darkest Days:** Led early pre-production work, defined core architecture, and trained new tech leadership.
  - **Clusterduck:** Took an internal GameJam prototype to release in 2 weeks, then regular updates boosting D1 retention to 40% and doubling ARPDAU.
  - **Rival Stars Horse Racing:** Architected a cross-platform Unity framework abstracting premium vs. F2P mobile economies, sharing 95% of the codebase across 5 SKUs; framework remains the core engine powering live-ops and new platforms (e.g. VR, Steam) 8+ years later.
  - **Dungeon, Inc.:** Designed and built a project-agnostic tutorial system. Presented at NZGDC 2017.

Good Game Studios *Hamburg, Germany*
Unity Client Developer *April 2016 - December 2016*

Closely collaborated with audio, localization, and art departments, developing tools to improve efficiency on Heroes Realm (Mobile Free to Play Hero Collector).

CerebralFix *Christchurch, New Zealand*
Game Programmer *February 2011 - April 2016*

Multiple C++, Flash AS3, and Unity C# projects, including work-for-hire titles for Disney (e.g. Club Penguin).

Education

Lincoln University: *Bachelor of Software & Information Technology* *2008 - 2010*

Awards & Honours

TIME Best Inventions | Aescape Robotic Massage System *2024*
- Prototyped software for the autonomous robotic system named one of the year's best inventions.

Fast Company Innovation by Design Award | Aescape Robotic Massage System *2024*
- Key software contributor to the initial prototype recognized for groundbreaking design innovation.

Pocket Gamer Best "Quick Play" Game | Clusterduck *2021*
- Developed core software/systems for the award-winning mobile title.

Jade Prize for Excellence in Software Engineering | Lincoln University *2010*
- Awarded to top-performing students for outstanding academic and technical achievement.