

Lee Hickey

Principal Engineer | Independent Contractor | Performance & Systems

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Profile

- 30+ years of performance work across C, C++, Golang and GPU - rendering engines, build/cook pipelines, simulation systems and distributed backends.
- Treats performance as an architecture decision: sets the budget up front where possible, instruments and ranks where the time actually goes where it is not, and says plainly when a design cannot reach the target.
- Delivered 40+ contract and in-house projects; led engineering teams of up to 30 and ran a games studio for 12 years.

Skills

Primary: C, C++, Golang, Vulkan, OpenGL, Lua

Secondary: JavaScript, Python, Rust, Objective-C, C#, GLSL, Slang, Solidity

Tools & Platforms: Unreal Insights, Superluminal, AWS, Git, Docker, Linux, MacOS, Windows, Nix, NATS, WebRTC, SQL, NoSQL

Experience

Founder & Principal Engineer

Hidden Bridge Limited

11/2018 – Present

Sheffield (UK)

Independent software engineering consultancy. Sole engineer and director; contract delivery with a focus on performance, engines and distributed backends.

Selected contract engagements

- **2026** - C++17 & Unreal Engine asset pipeline (cook) optimisations, profiled with Unreal Insights and Superluminal
- **2026** - Adversarial testing of frontier AI coding models for a model-training vendor - built realistic engineering tasks in Golang and Python that measurably defeat them, with automated pass/fail grading
- **2024** - Golang & DuckDB distributed analytics/feature-flag backend, using NATS JetStream
- **2023** - Golang & Svelte SaaS for brand UGC campaigns with an embedded Discord bot runtime - third engagement for PlayerState (2019, 2021, 2023)
- **2022** - Rust generative image pipeline, Golang & Vue platform and Solidity contracts for a digital art/collectibles venture
- **2021** - JavaScript & WebGL 3D renderer and in-browser authoring tool for procedural fashion
- **2021** - Golang, Rust & Vue platform for Ethereum-based collectible/customisable art project
- **2020** - C++17 & Vulkan 1.0 Mac/Windows apps with embedded WebRTC for remote screen-sharing
- **2020** - Golang & Redis backend for WebRTC client - session relay, user presence etc
- **2019** - Refactored and streamlined 10+ Objective-C and Swift iOS apps for mobile telemetry company

Skills: C, C++, Golang, Rust, JavaScript, Objective-C, Python, C#, Solidity, AWS (ECS, Fargate, DynamoDB, SES, S3), WebRTC, WebGL, OpenGL, Vulkan, Unity, Unreal, NATS, SQLite, DuckDB

Principal Engineer

Fig.co (formerly Ownage Limited)

06/2017 – 11/2018

San Francisco (US)

Community crowd-funding platform for computer games (like Kickstarter). Acquired Ownage Limited in Feb 2018

- Developed Ethereum-based platform for driving engagement
 - Built Golang backend and React frontend
 - Developed Golang CLI/SDK for per-project specialisation and React admin portal
 - Wrote a C++11 SDK for Unity & Unreal
 - Built iOS/Android wallet/authenticator using Flutter
- Skills:** Golang, C++, Dart, Flutter, AWS (Fargate, DynamoDB, S3), JavaScript, React

Lead Programmer | CTO | Owner

Games Faction Ltd

09/2005 – 06/2017

Sheffield (UK)

Independent games studio

- Created proprietary DirectX/C++03/Lua 3D game engine and associated tools for Windows/Steam

- Built proprietary OpenGL/C++11/Lua 2D/3D game engine and associated tools for iOS/Android
 - Wrote proprietary, highly-scalable, async C++11/LuaJIT backend runtime - for online games
 - Co-designed and developed 5 games, including award-winning **Project Aftermath** on Windows and the 50M+ downloaded iOS/Android hit **Storm the Train**
 - Engineered 20+ iOS/Android applications for clients including DIAGEO and adidas
 - Managed all day-to-day company running: recruitment, finance, legal, publishing, fund-raising etc
- Skills:** C++, Lua, Objective-C, Java, DirectX, OpenGL, Redis

Lead Programmer | Technical Director

03/1999 – 09/2005

Deep Red Games

Milton Keynes (UK)

Independent game developer, focussing on PC/Console simulation games

- Launched 3 titles and developed 5 prototypes
- Engineered proprietary C++98 game engine, tech and simulation systems for numerous games/prototypes, including **Tycoon City:New York** and **Monopoly Tycoon**
- Built and ran a core-tech team of 8 engineers, creating all technology used across the studio
- As Technical Director, coordinated/managed all engineers (approximately 30) across studio

Skills: C, C++, Lua, Direct3D

Programmer

07/1996 – 03/1999

Gremlin Interactive

Sheffield (UK)

Independent game developer and publisher

- Developed several PC and PlayStation 1 titles in C & C++98, including **Actua Soccer 2 & 3** and **Actua Tennis**

Skills: C, C++, x86, Direct3D

Personal Projects

Designer & Lead Developer

2025 – Present

Unannounced Title

Sheffield (UK)

Competitive procedural tycoon sim: Townscaper-like building on an irregular grid meets Monopoly Tycoon-style rival businesses.

- **Cinder** - C99 & Vulkan 1.3 renderer; minimal API for programmatic render pipelines
- **Pulse** - Golang & NATS JetStream backend; room abstraction over pub/sub for sessions and future multiplayer
- Procedural building system and economic simulation

Skills: C, Vulkan, Slang, Golang, NATS

Author

2026 – Present

Developer Tools

Sheffield (UK)

- **Assay** - Golang harness running Claude, Grok, Gemini and Codex agents in sealed containers; blind grading by hidden checkers, resumable runs, and a cheapest-first model ladder that stops on the first pass
- **Quire** - Golang, Templ & Datastar site engine, markdown in and a single binary out; plugins with sessions and live Datastar SSE state, and an incremental image bake whose serving binary cannot encode

Skills: Golang, Docker, Templ, Datastar

Education

University of Sheffield

1996

BSc. Hons. | Computer Science