

Robin Bryce, CV

[GitHub](#) • [LinkedIn](#) • [Medium](#) • [Games Credits](#)

Robin is a prolific, creative, and driven builder and entrepreneur. He thrives in highly dynamic, fast-paced environments and enjoys working alongside like-minded, high-caliber individuals. His work spans applied cryptography, digital transparency, and blockchain gaming, where he brings deep expertise in protocol architecture, distributed systems, and smart contract development. Robin is particularly passionate about building systems that align technical innovation with user trust—whether through scalable cryptographic infrastructure, decentralized identity, or game mechanics that push the boundaries of autonomous worlds.

Currently

Principal Engineer, [Datatrails](#).

Co-Founder, [Polysensus](#).

Career

Polysensus – Co-Founder (2021–Present)

- Founded a blockchain gaming R&D studio focused on smart contract-based autonomous game mechanics.
- Delivered [Chaintrap](#) – an on-chain, branching narrative game using commit-reveal and a bespoke system for merklized proof of valid moves. [Grant Application](#)
- Explored novel cross-game mechanics using MUD2 and ERC-6551, including cross-world item ownership and interaction.
- Actively contributes to the Autonomous Worlds community through hackathons, demos, and ecosystem experimentation.
- Delivered the first independent, interactive client for an autonomous world ([Dust x DagCity](#)) using only the on-chain smart contract interface. Demonstrated real-time rendering, state sync, and gameplay in a system not built by us — without backend or internal access.

Datatrails – Principal Engineer (2018–Present)

Principal Engineer, leading the research and development of Datatrails’ digital provenance solution. Responsible for product architecture. Subject matter expert on applied cryptography, distributed consensus, verifiable transparency, and smart contract programming.

- Invented and developed *Forestris*, Datatrails’ patented digital provenance ledger – MMR + cloud storage for transparency logs – [PC933720GB]
- Invented and developed a patented, privacy-preserving, auditable, transparent smart contract system for digital provenance in enterprise Ethereum EVM systems that support private transactions – Digital provenance with smart contracts – *GB2614297*
- Design authority for all aspects of the Datatrails transparency ledger
- Subject matter expert for applied cryptography, blockchain, smart contracts, and distributed consensus protocols
- Drove performance, cost optimization, and protocol innovation
- Delivered IETF contributions and open-source adoption strategies
- Program manager for Media Authenticity & Auditability product line
- Lead developer of the open-source *Merkle Mountain Range* library used in *Forestris*

Contracted Roles (2005–2018)

Enjoyed a 13-year freelance contracting career specializing in security applications and HSM firmware, with some exposure to medical devices and post-processing of enormous data sets in the form of gene sequencing data. Multiple engagements for Thales/Entrust, nCipher, and Illumina.

Early Career – Game Development (1994–2005)

- **2003: Founded Wiretooth**, initially conceived as a maker of multi-player SMS games.
- **1994–2003:** Early career in the games industry, credited on many successful and popular console and PC games, primarily as a graphics engine programmer responsible for maximizing performance across various hardware platforms.

Leadership & Impact

- **Technical Vision & Architecture:** Served as design authority across all aspects of the Datatrails platform. Defined the architecture for a highly scalable, cryptographically verifiable provenance system adopted in enterprise settings and presented at IETF.
- **Inventing Under Constraints:** Patented an MMR-based ledger (*Forestris*), enabling blockchain-grade transparency with 10–100× performance

improvements and 1000× cost reduction compared to traditional L1 systems. Work published through IETF and adopted in production.

- **Consensus & Scale:** Designed a custom BFT-style consensus layer for go-ethereum/go-quorum, increasing validator capacity from ~20 to 1000+ while maintaining <2s latency and 500+ TPS. Implemented and validated in production environments.
- **Product Leadership:** Led the Media Authenticity & Auditability product line at Datatrails—integrating watermarking tech into a white-label platform, managing external contributors, and aligning diverse stakeholder needs into a deliverable product.
- **Performance Engineering:** Delivered a 1000× platform throughput improvement by re-architecting internal messaging, reducing broker overhead, and scaling system components.
- **Federated Identity & Onboarding:** Delivered OAuth2, SSO, and social login integration for multi-tenant systems. Reduced enterprise onboarding from days to hours and supported commercial deployments.
- **Standards & Influence:** Authored multiple IETF drafts, presented at Google Transparency Dev 2024, and contributed to COSE and SCITT standardization efforts, positioning Datatrails as a thought leader in transparency infrastructure.
- **Composable Game Clients:** Built an independent rendering client for *Dust* at *DagCity* based solely on on-chain smart contract state—demonstrating autonomous world UX can be built without any backend or privileged infrastructure.
- **Funding & Entrepreneurship:** Secured £15,000 Optimism Foundation grant for Chaintrap, a choose-your-own-adventure blockchain game implementing novel commit-reveal and merklized move validation mechanisms.

Key Skills & Domain Expertise

- **Languages:** Go, Solidity, TypeScript, Python, Bash
- **Smart Contracts & ERCs:** ERC-721, 1155, 4337, 6551; non-custodial wallet solutions (zerodev, web3auth) and onboarding, foundry-rs
- **Storage, Persistence & Application Security:** Redis, MongoDB, PostgreSQL, Traefik, Istio, Cert-Manager/Let's Encrypt, Azure Blob Store, Google Object Store
- **Infrastructure:** Kubernetes, Terraform, Flux, Flagger, GitOps; Azure, GCP
- **Frontend:** SvelteKit, TailwindCSS, SkeletonUI, Vite
- **Identity & Standards:** TLS auth, OAuth2, OpenID Connect, IETF COSE & SCITT
- **Applied Cryptography:** ECDSA, VRFs, arithmetic circuits, polynomial commitments, verkel trees
- **System Design:** Distributed systems, applied cryptography, consensus algorithms, verifiable data structures, GPU rendering

Mentorship & Team Development

- Responsible for onboarding and mentoring all new engineering hires at Datatrails, helping them integrate quickly and contribute effectively.
- Experienced in handling sensitive HR matters, including performance management and dismissal processes, with professionalism and discretion.
- Personally mentored two A-Level students: one secured a degree apprenticeship with IBM; the other gained admission to a finance degree program with support and a reference.

Selected Open Source, Standards Work, and Writing

- *If You Go Down to the Woods Today*
- Production-grade MMR library – *go-datatrails-merklelog*
- Author of standards-track draft – *COSE MMR Proofs (IETF)*
- *Google Transparency Dev 2024*
- *Autonomous Worlds Hack 2024* – Used ERC-6551 on Redstone to allow cross-game world token interactions without code changes.
- On-chain narrative game (Optimism Grant) – *Chaintrap Game Contracts*
- High-throughput BFT consensus implementation – *RRR Consensus*
- *The Persistence of Ten-Year-Olds* – Background and narrative design for Chaintrap, an on-chain choose-your-own-adventure game funded by Optimism.
- *From Pages to Tree Leaves* – Explores commit–reveal mechanisms for branching narratives on the blockchain.

Education & Legacy Skills

- **Education:** 3 years of (Hons) BSc Computing (1994), 5 Higher Grades (Scottish A-levels)
- **Legacy Tools:** C/C++, DirectX, device drivers, Ansible, Jenkins, bespoke kernels