

David Vennik

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Summary

Senior backend and distributed systems engineer. 10 years building production services, protocol implementations, event-driven architectures, and high-performance infrastructure in Go. Designed and shipped relay networks, real-time matchmaking engines, cross-protocol sync services, and decentralized marketplace backends handling concurrent users.

Production experience with React 19/TypeScript frontends, end-to-end test infrastructure, and full-stack delivery from API design to deployment. Deep understanding of concurrency, fault tolerance, and system reliability through CSP/Actor architecture and domain-driven design.

Advanced AI-augmented development workflows with Claude Code: agentic task orchestration, custom tooling, and automated code generation for systems engineering.

Skills

- **Backend:** Go (10yr), gRPC/Protobuf, REST API design, WebSocket, event-driven architecture, message passing, microservices
- **Distributed Systems:** Consensus protocols, gossip networks, peer-to-peer networking, relay infrastructure, cross-protocol synchronization, fault-tolerant service design
- **Infrastructure:** Linux, Docker, bare-metal deployment, CI/CD (GitHub Actions, GitLab CI, Gitea), systemd, Caddy, reverse proxy configuration, container orchestration
- **Data & Storage:** Badger (LSM key-value), append-only logs, event sourcing, protocol-specific data stores, embedded databases
- **Concurrency & Performance:** CSP channel-based architecture, Actor model, SIMD optimization

(AVX2), memory-efficient data pipelines, zero-copy techniques

- **Frontend:** React 19, TypeScript, TanStack (Router/Query/Store/Form), Radix UI, Tailwind v4, Svelte
- **Testing & Quality:** Playwright E2E, integration testing, load testing, automated browser testing, Selenium
- **AI Engineering:** Claude Code (custom skills, MCP servers, agentic workflows), AI-augmented architecture and development
- **Additional:** Rust (gRPC integration), cryptographic protocol implementation (secp256k1, Schnorr, ECDH, MuSig2), compiler and language tooling, LLVM

Experience

Senior Backend Engineer & Systems Architect

Feb 2026 - Present

Building and operating distributed infrastructure for a decentralized social platform serving live users. Designed event-driven relay network with real-time message routing, encrypted group messaging (MLS protocol), and multi-relay synchronization. Built WASM-based client architecture with dedicated worker threads for cryptographic signing, network communication, and state management.

Developed parallel build systems and high-performance data pipelines with deterministic memory management and domain-isolated concurrency. Implemented cross-platform service deployment targeting Linux, macOS, and WebAssembly.

Stack: Go, TypeScript, WebSocket, gRPC, WASM, Docker, Linux, systemd

Full Stack Developer - Plebeian Market

Sep 2025 - Mar 2026

100+ pull requests (84 merged) to a production React 19/TypeScript decentralized marketplace. Built data migration tooling with multi-endpoint progress feedback and retry logic. Implemented real-time event subscription system across distributed relay network. Authored comprehensive Playwright E2E test suite covering authentication flows, CRUD operations, payment processing, and multi-user scenarios. Built browser extensions for cryptographic identity management.

Stack: React 19, TypeScript, TanStack Router/Query v5, Radix UI, Tailwind v4, Playwright, Bun

Senior Backend Engineer - Hubmaker Labs

Oct 2023 - Jul 2025

Built distributed relay server with RPC interface for a federated network spanning multiple backend services. Engineered cross-protocol synchronization service: ingesting events from three independent distributed networks and archiving to persistent distributed storage. Designed and built real-time matchmaking engine with concurrent event processing and WebSocket-based live updates for a social platform (Shonen Network).

Stack: Go, gRPC, WebSocket, event-driven architecture, distributed storage

Protocol Engineer - Indra Labs

Oct 2022 - Sep 2023

Designed and implemented source-routed network transport protocol with bidirectional privacy guarantees (55 GitHub stars). Built onion-encrypted routing system, relay payment channels, and gossip-based peer discovery network in Go. Authored protocol specification white paper. Implemented fault-tolerant message routing across unreliable network of distributed relay nodes.

github.com/indra-labs/indra

Go Developer & Technical Writer - Quanterall

Feb - Jul 2022

Authored comprehensive Go training curriculum for developer onboarding. Designed hybrid consensus protocol (Kismet) for distributed application chains with configurable finality guarantees.

github.com/quanterall/kitchensink

Backend Engineer - Dusk Network

Oct - Dec 2021

Contributed to Go-based distributed node software and Rust gRPC service infrastructure for a privacy-focused transaction protocol.

Systems Engineer - Parallelcoin

May 2018 - Sep 2020

Built parallel work distribution system with LAN multicast UDP gossip network for low-latency task coordination across distributed workers. Designed concurrent multi-application binary combining four independent services with shared configuration and lifecycle management. Implemented custom scheduling and work distribution algorithms.

Earlier Experience

- **Systems Engineer - Energi** (2021): Simulation framework for validating distributed system parameters.
- **Independent Research** (2012-2018): Distributed consensus (Tendermint, BFT variants), Go systems programming since 2012.

Open Source

All systems and infrastructure work is publicly available at git.smesh.lol. Production relay servers, protocol implementations, and distributed systems tooling with full commit history.

Education

Certificate IV in IT (Multimedia), QANTM College (University of Queensland consortium), Brisbane, Australia, 2003

QANTM was a specialist technology program established jointly by six Queensland universities including UQ, QUT, and Griffith. Curriculum included programming language theory, systems administration, and web systems engineering. Now operating as SAE University College.