

Jeffrey Sylvan

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Staff / Principal Software Engineer | Distributed Systems, Platform & AI Infrastructure

Principal-level backend and platform engineer with 20+ years building distributed systems, developer platforms, and production services across fintech, marketplaces, SaaS, ecommerce, and game infrastructure. Known for turning complex architecture into adopted systems: reducing operational burden, scaling high-throughput services, leading cross-team design, and coaching engineers through pragmatic technical standards.

SELECTED IMPACT

- Led the first non-data-science engineering team at CarGurus to ship a production ML application with a full MLOps pipeline; the application was highlighted to investors during an earnings call and paved the way for other backend engineering teams to follow.
- Established a continuous delivery pipeline at First Republic Bank that reduced deployments from days to minutes and was adopted across hundreds of engineers.
- Identified a scaling flaw in core commerce infrastructure that compounded with every acquisition and threatened Cimpres's ability to sell into the EU; won buy-in across departments, led the rebuild, and handed off a platform that ran incident-free under a junior team, freeing senior staff for higher-value work.
- Founded Apocoplay and led a 20-person team building game infrastructure that reduced server and development costs by 90% per game.

CORE TECHNICAL STRENGTHS

Distributed Systems: microservices, monolith decomposition, event-driven architecture, CQRS, DDD, caching, high availability, scalable APIs

Cloud & Platform: AWS, Docker, Kubernetes, Terraform/OpenTofu, Helm, Kafka, Redis, Temporal, S3, SQS

ML & AI: SageMaker, scikit-learn, LightGBM, PySpark, AI agents (Claude Code, Codex, Devin, OpenHands, CrewAI)

CI/CD & Observability: Jenkins, GitHub Actions, Prometheus, Grafana, Splunk

Languages & Web: C#, Java, Python, Go, TypeScript/JavaScript, Node, React, Vue, Angular

Engineering Leadership: ADRs, architecture reviews, mentoring/training, TDD, contract testing, load testing, chaos testing

PROFESSIONAL EXPERIENCE

CogniCluster LLC (AI developer-tools startup)

Feb 2026 – Present

Founding Engineer

- Architecting Legend of the Black Skies, a persistent multiplayer space game designed to host 10,000-player battles with no time dilation, beyond the point where record-setting titles (EVE Online at 6,557 players, NetEase at 9,524) slowed the clock or degraded.
- Designed the core as strongly consistent hex-tile simulation cells stitched by a gossiped ownership mesh (H3, SWIM, epoch fencing, Redis Streams, Aurora Limitless), so worst-case load is bounded by the game rules themselves.
- Developing the game through an orchestrated fleet of AI coding and research agents (Claude Code, Codex, Devin, OpenHands, CrewAI, Parallel.ai) with Temporal-coordinated workflows, DAG-based planning, and agentic Playwright QA; designing an intent-governed compiler that turns work graphs into task-specific Temporal orchestrators with governance contracts built in.
- Red-teamed the architecture with the same agent fleet, stressing it against documented failures of comparable titles and iterating until the design held its p99 tick budgets under saturation, passed 1,000+ test methods, and survived chaos suites with zero-tolerance correctness SLIs; authoring an eight-part architecture series for publication.

CarGurus

Jul 2023 – Feb 2026

Principal Software Engineer

- Led the first non-data-science engineering team to ship a production ML application with a full MLOps pipeline; the application was highlighted to investors during an earnings call.
- Authored ADRs and technical specifications for cross-team architecture decisions; led architecture reviews to improve system coherence, ownership boundaries, and scalability.
- Designed and built greenfield microservices and modernized dealer-side applications by moving monolithic workflows into service-based architecture.

First Republic Bank

Aug 2018 – Jun 2023

Senior Software Engineer (Principal scope)

- Established a scalable continuous delivery pipeline that reduced deployment times from days to minutes, drove company-wide adoption, and impacted hundreds of engineers.
- Led training for 50+ engineers, architects, and directors on delivery practices, maintainability, and cross-team collaboration.
- Led teams building core infrastructure applications recognized by management as "a model of efficiency and communication."
- Promoted optimization techniques in mission-critical software, improving productivity through voluntary adoption across teams.

HubSpot

Dec 2017 – Jun 2018

Senior Software Engineer

- Built REST services and integrated Kafka into a data pipeline for identity and user data workflows.

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Cimpres (Vistaprint)

Jan 2015 – Oct 2017

Lead Software Engineer

- Identified that tax lookup data, queried multiple times per page load and growing multiplicatively with each acquisition, would soon outscale the platform and block sales into the EU; built cross-team consensus for a replacement.
- Designed a C# business-rules engine that computed tax outcomes instead of enumerating combinations, deployed as cached, horizontally scalable microservices sustaining thousands of queries per second.
- Validated via A/B testing against the legacy system, where every discrepancy proved to be a legacy bug; ownership passed from 4+ senior engineers to a junior team, who ran it without incident.

Apocoplay (game modernization startup)

Apr 2012 – Jan 2015

Founder and CTO

- Led a team of 20 and designed a server-side engine for real-time routing and rule processing in large-scale multiplayer online games.
- Improved performance, stability, and scalability for games ported to the engine, reducing server and development costs by 90% and saving hundreds of thousands of dollars per game annually.

EARLY CAREER

- **Allscripts** | Software Engineer | Feb 2011 – Mar 2012: Designed hospital financial software; mentored junior engineers on Agile and engineering practices.
- **Council for Logistics Research** | Software Engineer | Mar 2006 – Feb 2011: Built software for the Office of the Secretary of Defense to track trillions in defense spending; created performance algorithms and full-stack systems.
- **PRTM** | Web Applications Designer | 2005 – 2006: Built CTO skunkworks projects, managed offshore developers, and maintained internal infrastructure.
- **QScend Technologies** | Senior Software Engineer | 2001 – 2005: Developed municipal web software; introduced practices that reduced average development time by 75% while improving stability.
- **ASC Games** | Independent Contractor | 1999: Provided developer feedback and quality standards for Game Boy and early Dreamcast titles before physical retail release.

EDUCATION & PROFESSIONAL DEVELOPMENT

University of Hartford, B.S. Computer Science

MIT Start Smart (Entrepreneurial program) | **MIT Invest Smart** (Angel investor program)

MIT Certificate, Blockchain | **MIT IDSS Certificate, Data Science**