Christopher Vincent Lombardi

Allison Park, PA 15101 | (571) 882-1798 | Christopher@ChristopherVLombardi.com
Website: www.ChristopherVLombardi.com LinkedIn: www.linkedin.com/in/chris-lomb

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Principal/Staff Software Engineer | Distributed Systems, Multi-Tenant Platforms, AI/ML Systems

Principal/Staff Software Engineer specializing in distributed, multi-tenant and AI/ML-enabled, web SaaS solutions. Senior leader with a track record of modernizing architecture for global institutions and delivering high-impact products on aggressive timelines. Delivered a multi-tenant platform that accelerated enterprise client onboarding and ensured resilient, scalable processing under variable workloads. Seeking to leverage deep expertise in scalable systems to drive product innovation and operational excellence.

Professional Experience

Confluence Technologies Inc. — Principal Software Engineer | 12/2015–Present | Pittsburgh, PA

- **Support 102+ clients across 40+ jurisdictions** by leading architecture, implementation, and delivery of a regulatory reporting SaaS platform, owning both data processing and core application layers, including rebuilding and enhancing the primary application and integrating a secondary product to expand platform capabilities and market reach, enabling day-one delivery within an accelerated 18-month timeline.
    - **Platform Architecture & Delivery:** Delivered and scaled a global regulatory SaaS platform by leading full lifecycle evolution, consolidating legacy systems, and resolving architectural risks early by enabling long-term scalability via standardized microservices and CI/CD practices.
    - **Customer Impact:** Sustained high customer adoption, retention, and satisfaction by combining deep domain expertise, proactive stakeholder engagement, and consistent execution, including enhancing core application capabilities and integrating additional functionality to meet evolving client needs.
- **Drive multi-million-dollar product growth** by defining technical direction and leading cross-team engineering initiatives aligned with product strategy, directly contributing to revenue growth while maintaining strong contribution margins.
    - **Client Onboarding & Throughput:** Reduced client onboarding time from **months to days** by engineering an extensible, abstract ETL platform that decoupled domain logic from data processing and enabled re-usable, parallelized client implementations.
- **Onboarded 9 senior engineers and strengthened team capabilities** by defining hiring standards, mentoring engineers, and establishing consistent cross-team engineering practices.
    - **Onboarding Acceleration:** Reduced engineer ramp-up time by **~65% (3+ months → ~1 month)** by establishing structured onboarding, mentorship, and standardized engineering practices.
    - **Retention (3–9 years):** Achieved **~78% retention (7 of 9 engineers)** over a 9 year period by fostering strong engineering practices, mentorship, and long-term career development.
- **Minimized operating costs and maximized server utilization and data processing performance** by implementing scale-to-zero deployment strategies, multi-tenant workload balancing, batching, caching, and horizontally scalable execution patterns.
    - **Performance & Throughput Optimization:** Reduced processing latency from hours → minutes and minutes → seconds **(10x+ throughput increase)** by re-architecting compute-heavy components into distributed, event-driven systems with orchestration and parallel execution.
    - **Scalability & Cost Optimization:** Decreased DB load **to <10%** by re-architecting systems into distributed, event-driven architectures with orchestration, caching, and parallel processing; eliminated cross-tenant bottlenecks and **reduced hosting costs by ~16x** through dynamic workload allocation and cloud-native scaling.
- **Expanded product AI capabilities and reduced costs** by designing AI-driven features with optimized prompts and model selection to reduce token utilization and improve response efficiency and accuracy.
    - **AI Model Optimization & LLM Systems:** Optimized production AI workflows for latency, cost, and accuracy by evaluating and benchmarking LLMs, and designing context conditioning strategies with pre-seeded retrieval pipelines to improve grounding and determinism.

- **Improved engineering efficiency, delivery speed, and software quality** by defining architectural direction aligned with business goals and establishing standardized engineering practices that enabled internal engineering mobility across heterogeneous system architectures. Drove adoption of Claude Code and AI-assisted workflows to further increase development velocity.
    - **Engineer Onboarding, Mobility & Productivity:** Designed and deployed internal RAG pipelines for domain-aware development assistance, improving context access across complex systems and reducing onboarding friction for engineers, enabling **day-one** meaningful contributions across teams.
- **Achieved near-zero defect leakage and zero high-severity security vulnerabilities** by architecting and driving adoption of a test data generation platform, integration testing framework, and CI-based validation systems that proactively prevented regressions.
    - **Quality Engineering & Testing Systems:** Reduced regression risks through **100% domain code coverage** (with unit tests), DB & API layers by building a dynamic, outcome-driven, extensible integration testing (TestContainers) framework, and improved engineering velocity by **~20%** and reduced regression-related defects by **up to 40%** by designing automated test-data generation systems enabling end-to-end (cross-product) validation across complex workflows and QA self-service tooling.
- **Enabled 99.9% SLA reliability and improved client satisfaction** by leading production incident response and postmortems, implementing proactive observability and resiliency improvements, and introducing Scrum-based Agile practices that reduced rework, accelerated feedback loops, and improved delivery quality.
    - **Observability & Resilience:** Reduced incident detection and resolution time from hours to minutes **(90%+ improvement)** by replacing database-based logging with centralized observability and alerting, enabling rapid diagnosis and automated recovery of transient errors with resiliency strategies (retry policies, backoff strategies, bulkheading).
    - **Agile Delivery Transformation:** Improved delivery predictability, team ownership, and feature quality by introducing Scrum practices, enabling forward backlog planning **(>3 months and growing)** where there was none at all, reducing rework, and strengthening cross-team communication.

Problem Solutions LLC — Software Engineer | 05/2013–11/2015 | Johnstown, PA

- **Platform Development & Scale:** Designed and deployed a scalable SaaS corporate education platform serving 20+ clients globally, optimizing for performance, tenant delivery, and international usability.
- **Full Lifecycle Delivery:** Delivered production-ready features end-to-end by collaborating directly with stakeholders across design, development, and deployment phases.
- **Mentorship & Team Foundations:** Accelerated team capability and onboarding by mentoring developers and establishing foundational engineering practices.
- **Global Expansion & Localization:** Expanded platform adoption into Asian markets by leading contracting initiatives focused on localization, deployment, and cross-region scalability.

Technical Skills

Architecture / System Design: Microservices, Monoliths, Serverless, Distributed Systems, Event-driven, CQRS, Multi-Tenant, SaaS, Domain Driven Design, AI/ML-enabled systems (e.g. RAG inference pipelines)

Backend & Frameworks: .NET Core, Orleans, Entity Framework, Dapper, REST, gRPC, SignalR

Frontend: React, Typescript, Javascript

Cloud & DevOps: Azure: AI Foundry, Functions, Logic Apps, Data Factory, DevOps, Service Fabric, Cloud Services, Kubernetes, IaC (Terraform), Docker

Data & Messaging: Azure SQL, MongoDB Atlas, Redis, ETL/ELT pipelines, QDrant, Embedding Pipelines

Security: OAuth2 & secure API design, Auth0, Azure Key Vault, Azure App Gateway, OWASP, Veracode

Testing & Practices: TDD, Solid Principles, xUnit, TestContainers, Agile (Scrum)

Languages: C#, SQL, KQL, TypeScript, JavaScript, PowerShell, Python, Terraform

Tools: Visual Studio, VSCode, ReSharper, Git, Claude Code, React Dev Tools, OLLama, LM Studio

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Education

B.S. Computer Science — University of Pittsburgh at Johnstown | 08/2011–12/2014 | Johnstown, PA