

MARTIN LOUIS

AI-NATIVE ENTERPRISE PLATFORM & CUSTOMER EXPERIENCE ENGINEERING LEADER

Agentic Systems | Enterprise AI Architecture | Autonomous Servicing | Platform Strategy

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EXECUTIVE SUMMARY

AI-native enterprise platform leader with 19+ years building systems that connect real-time signals, semantic context, retrieval and LLMs, agents, enterprise tools, workflows, governance, and people to reliable customer and business outcomes. Lead a 30+ engineer organization across five teams at PayPal; scaled a two-person effort ~5x into a reusable platform serving tens of millions. Bring enterprise-level ownership across reference architecture, product and investment strategy, organizational design, platform economics, and multi-team execution.

Selected impact: 30+ engineers / 5 teams | ~5x platform growth | tens of millions served | nine-figure annual transaction value recovered | 200+ product managers | 6 peer-reviewed papers | IEEE Senior Member

LEADERSHIP & ARCHITECTURE

AI-Native Enterprise Platforms · Agentic AI & Autonomous Workflows · Reference Architecture · Semantic Layers & Canonical Domain Events · Data Contracts & Event-Driven Systems (Kafka) · Retrieval, RAG & Knowledge Graphs · MCP-Based Tool Integration · Workflow State & Orchestration · Evaluation, Observability & Reliability · Governance, Guardrails & Human-in-the-Loop · Customer Experience / NPS-Oriented Signals · Cost-to-Serve & TCO · Platform Adoption & Reuse · Investment Strategy · Engineering Productivity · Organizational Leadership

PROFESSIONAL EXPERIENCE

PayPal — Senior Engineering Manager, AI-Powered FinTech & Customer Success

Aug 2022 – Present

Austin, TX · Enterprise AI platforms, agentic systems, and autonomous customer servicing

- **Set the platform vision and north-star reference architecture** for a 30+ engineer organization across five teams spanning knowledge and answer platforms, proactive servicing, intelligent routing, predictive AI, and autonomous agents; own roadmap, investment, resourcing, and delivery.
- **Led development of a reusable enterprise agentic AI framework** combining grounded LLM/RAG patterns, multi-agent and multi-turn orchestration, MCP-based tool interfaces, workflow state, evaluation, observability, policy guardrails, and human-in-the-loop execution across servicing workflows.
- **Architected a shared semantic intelligence layer across fragmented product domains** using canonical domain events, data contracts, behavioral and transactional signals, a product knowledge graph, retrieval, ranking, and decisioning; streamed across 20+ Kafka topics spanning a dozen domains and adopted beyond the original organization.
- **Reimagined content and knowledge operations as AI-native workflows** from design intent through structured content models, generation, translation, publishing, review, legal approval, and human oversight—creating reusable platform primitives instead of channel-specific automation.
- **Scaled the platform ~5x from a two-engineer effort into a multi-team capability serving tens of millions;** delivered 11+ data-driven intervention strategies that recovered nine figures in annual transaction value and advanced proactive, goal-oriented servicing.
- **Converted platform strategy into enterprise adoption and investment:** built the business case for a multi-year, multi-million-dollar program; aligned four partner organizations on shared architecture, governance, and an answer-quality SLA; enabled self-service reuse by 200+ product managers.
- **Drive portfolio decisions through customer and operating economics,** balancing experience and NPS-oriented signals, self-service effectiveness, transaction recovery, reliability, cost-to-serve, TCO, adoption, and reuse; set KPIs for uptime, test coverage, answer quality, and delivery velocity.
- **Increase organizational leverage through AI-assisted engineering, rapid prototyping, automation, and reusable standards;** hire, mentor, and retain engineers and managers while leading architecture and execution through significant organizational change.

PayPal — Software Engineering Manager

Aug 2018 – May 2022

Austin, TX · Personalization, real-time decisioning, and intelligent customer self-service

- **Evolved enterprise content management into a reusable intelligence platform,** connecting knowledge, behavioral signals, analytics, personalization, and experience delivery—the foundation for later proactive servicing and AI-native workflows.
- **Architected and delivered a real-time Java/Spring recommendation and personalization engine** that ranked and adapted self-service content at scale.
- **Improved recommendation accuracy ~25% with a content-confidence scoring model and reduced search time ~40%** for 10M+ monthly active users through real-time analytics, relevance, and decisioning.
- **Secured executive sponsorship and multi-million-dollar investment** for AI-driven content, search, and personalization while leading architecture, delivery, talent development, operational excellence, and cross-functional execution.

PROFESSIONAL EXPERIENCE | CONTINUED

PayPal — Member of Technical Staff

Oct 2011 – Jul 2018

Austin, TX · Search, knowledge, retrieval, and self-service foundations

- **Designed large-scale search and knowledge capabilities for 50M+ users** using Java, Lucene, Oracle Knowledge/Search, NLP, and relevance engineering across web, mobile, and conversational channels.
- **Developed fuzzy-matching and search-relevance capabilities that reduced resolution time ~35%**, building deep technical lineage in retrieval quality, ranking, semantic matching, and trusted knowledge systems.
- **Built reusable search and knowledge services and automated AWS deployments** across APIs, data integration, reliability, and production operations; earned multiple PayPal SPOT Awards.

Computer Sciences Corporation (CSC) — Associate Manager / Senior Software Engineer

Jan 2008 – Sep 2011

Thailand · Enterprise architecture and delivery for energy and financial-services clients

- **Led a 20-member team re-platforming a J2EE planning application to .NET/C#**, reducing integration overhead ~25% through Java/.NET middleware; supported RFP negotiations that secured a seven-figure engagement as an economics-modeling SME.
- **Designed a scalable Adobe Flex + Java services platform for oil/gas production forecasting**, achieving ~95% upstream forecasting accuracy.

Covansys — Software Engineer / Associate Projects, Advanced R&D & Innovation

Dec 2005 – Mar 2008

Chennai, India · Enterprise web, integration, and innovation for financial-services clients

- **Built mainframe-to-modern integrations and full-stack proofs of concept** using COBOL and Java/J2EE for a Citibank stock portal; supported pre-sales POCs contributing to multi-million-dollar project wins and earned Covansys PRIDE and CORE Excellence awards.

SELECTED PUBLICATIONS | 6 PEER-REVIEWED PAPERS, 2019–2023

- *Multilingual Search Optimization Using BERT AI and Product Knowledge Bases* — IRE Journals, 2019
- *Semantic Search Leveraging Product Knowledge Graphs for Financial Products in Web 2.0 Ecosystems* — IRE Journals, 2020
- *Personalized Recommendation Systems for Customer Self-Service and Promotions* — WJARR, 2021
- *Using LLMs to Address the Cold-Start Problem in ML Training Data for E-Commerce Product Listing Generation* — WJARR, 2023
- *Scaling Trustworthy AI: A Framework for Responsible System Design* — GJETA, 2023
- *Transforming Commerce: The Role of NFTs in Enhancing Customer Engagement and Loyalty* — IJSRA, 2022

RECOGNITION & THOUGHT LEADERSHIP

- **IEEE Senior Member** (top ~10% of members); active across the Computer Society, Control Systems, Signal Processing, and TEMS.
- **Invited Industry Keynote** — IEEE CCIC 2026 on agentic design and trustworthy AI.
- **Four media features** on agentic AI and behavioral intelligence: AI Journal, Techstrong.ai, AllTech Magazine, and SiteProNews.
- **Additional recognition:** PayPal SPOT and performance awards; PayPal Austin Hackathon Bounty Winner (2018); CSC Chairman's Technical Excellence Award nominee; Covansys CORE Excellence and PRIDE awards.

EDUCATION & CERTIFICATIONS

- **The University of Texas at Austin** — Post-Graduate Program in Cloud Computing (in progress, expected 2027).
- **Bharathiar University, India** — Master of Computer Applications (MCA) and B.Sc. Computer Science.
- **Certifications:** AI Agentic Design Patterns with AutoGen (DeepLearning.AI) · Certified Product Manager (Product School) · Six Sigma Green Belt · Sun Certified Java Programmer · IBM Certified Database Associate · Oracle Knowledge Management.