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Senior engineering manager with a strong technical background and a track record of delivering AI platforms, LLM- and agent-powered products, AI-first design systems, and cross-functional programs across creative software, healthcare, analytics, and developer platforms through strategic planning, customer-centric development, and disciplined execution.

Areas of Expertise and Skills

- **AI Product and Agentic Systems:** LLM-powered products, AI-first agentic workflows, MCP integrations, multi-agent exploration, multimodal AI, prompt/tool orchestration, scorer calibration, and AI-assisted team operations.
 - **Retrieval, Evaluation, and Data:** Advanced hybrid RAG, vector and semantic search, BM25, reranking, RAGAS, Needle-in-a-Haystack, quality dashboards, disagreement analysis, and document-level metrics.
 - **Product Strategy:** Product planning, customer feedback, launches, risk management, market research, roadmap creation, competition monitoring, feature prioritization, and stakeholder alignment.
 - **Leadership:** Senior engineering management, team development, executive communication, cross-functional alignment, operating cadence, capacity planning, ownership, and decision boundaries.
 - **Technical Skills:** Python, C++, Node, React, AWS, Azure, Azure AI, LLM, RAG, MCP, ChromaDB, Weaviate, OpenAI, APIs, GPU/resource allocation, CI/CD, performance monitoring, and test automation.
 - **Business and Governance:** ROI analysis, budget management, build-versus-buy analysis, Customer Value Management (CVM), AI safety and ethics review, privacy/HIPAA awareness, and vendor management.
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Senior Software Engineering Manager, Adobe, [05/2024 - Present]

- Lead two teams (18 total across CS, ML, QA) across Adobe Express, Firefly Boards, and shared horizontal platforms, delivering GenAI typography and editing capabilities with predictable execution cadence and clear ownership boundaries.
- Contributed to a newer AI-first agentic typography initiative that applies LLM-driven reasoning, multimodal layout analysis, heuristic guardrails, and structured evaluation loops to improve typography across design layouts, with stronger early quality signals than prior architecture explorations.
- Drove an AI-powered typography correction capability through internal integration and readiness paths across creative product surfaces, enabling partner testing, reusable typography capabilities, scalable evaluation, and future product integration.
- Supported the primary internal product surface for AI-assisted design cleanup and helped define layout-pattern to remediation decision frameworks for future layout improvement workflows.
- Built scalable evaluation systems using vendor-assisted scoring, external review, internal scoring, disagreement analysis, dashboards, and document-level quality tracking.
- Improved internal quality signals by reducing escape rate from about 49% to 19%, reducing error rate from about 1.4% to 0.2%, and increasing improved outputs from about 35% to 65%.
- Drove performance baselining and optimization for AI-powered design correction, reducing runtime from about 30 seconds to about 13 seconds and establishing P75 visibility around 8-11 seconds.
- Built MCP integrations across Jira, GitHub, CircleCI, and Slack for agent-accessible project tracking, status visibility, scheduling, and workflow automation.
- Deployed and supported AI infrastructure across AWS and Azure for model-backed experiments, evaluation tooling, GenAI workflows, and internal productivity systems.
- Introduced AI-assisted team workflows for scoring analysis, Jira/story clarity, project checkpoints, dashboard reviews, model-ranking analysis, and prioritization during compressed delivery cycles.
- Owned roadmap and execution for single-text editing in Adobe Firefly Boards, supporting editability for a high-visibility creative workflow; prepared Ethics and AI Safety reviews for GenAI initiatives.

Senior Software Engineering Manager AI/ML, Moderna, [05/2023 - 02/2024]

- Led product strategy and engineering delivery for mChat, an internal LLM-powered GenAI productivity platform adopted by 75% of users and recognized externally in a Moderna investor call.
- Built a secure, reusable GenAI platform foundation using AWS ECS, S3, ChromaDB, Weaviate, and API-based integrations, enabling cross-functional teams to experiment with AI-assisted workflows.
- Designed and implemented an advanced hybrid RAG pipeline and evaluation framework combining semantic vector search, BM25, reranking, chunking experiments, RAGAS, and Needle-in-a-Haystack testing; improved grounding accuracy, answer relevance, and retrieval quality.
- Added multi-model and multimodal capabilities, including web-browsing support, RAG workflows, and image-creation tools, expanding mChat beyond text-only productivity workflows.
- Partnered with internal customers to identify productivity bottlenecks, prioritize high-value GenAI use cases, and iterate quickly based on user feedback while monitoring privacy and sensitive data concerns.
- Drove AI adoption through internal enablement, AI social groups, brown bags, practical examples, and customer feedback loops that helped teams identify where LLMs could improve daily work.

- Strengthened delivery quality through continuous deployment, Scrum refinement, API-based integration patterns, and Cypress testing.

Engineering Manager, Tableau, [07/2015 - 03/2023]

- Spearheaded Image Role, allowing users to map text strings to images in Tableau dashboards, improving data comprehension, engagement, and productivity while keeping workbook sizes manageable.
- Managed scope and timeline for Browser Everywhere as Scrum Leader, shipping SP1 and implementing a hybrid unified UI across desktop and web technologies.
- Grew the developer user segment by 30% through Visualization API SP2, improved onboarding speed by 20%, and increased extensions and apps using the API by 30% within a year.
- Migrated the on-prem translation pipeline to the cloud, improving team velocity and aligning technology across Tableau and Salesforce.
- Built a multi-year team roadmap aligned with business goals; transformed the team to be self-organized with assigned leadership for operations, quality, and feature development.
- Implemented lean startup principles and prioritized customer bug fixes, reducing the bug ratio from 1:15 to 1:3 and saving \$100K by deprecating rarely used tests with low fixed-bug yield.
- Built CI/CD pipelines for VPT and Qt teams, deploying C++, Emscripten, and JavaScript across Windows, OSX, and Linux using TeamCity, CMake, and Python.
- Debugged JavaScript performance and reliability issues across JavaScript and C++ boundaries; monitored scalability of Tableau Hyper using TabJolt and designed scenarios to resolve bottlenecks.
- Refactored Partition Model Producer, enabling new features such as headers and axes and supporting ongoing product enhancements.

Software Development Engineer II, Microsoft, [03/2007 - 07/2015]

- Designed and delivered features for Windows and Office on Apple OSX and iOS in a live, complex, and highly scaled production environment.
- Led right-to-left support in Office APEX, reimplementing Windows and Office code for Apple OSX and iOS and adapting text rendering behavior across platform boundaries.
- Designed and implemented Extensible Incident Detection Utility for SQL Azure.
- Built software testing programs to automate testing processes and recommended product improvements; received Microsoft Gold Star Award in 2008.

Selected Technical Foundations

- Deep text and typography foundation across RTL/BiDi, Unicode, font rendering, complex-script layout, and cross-platform text behavior from Microsoft Office and earlier platform work.
- AI and platform execution depth across cloud services, GPU/resource readiness, APIs, CI/CD, evaluation dashboards, and performance/reliability monitoring.
- Developer platform experience across APIs, extension ecosystems, full-stack systems, and hybrid C++/JavaScript product architectures.
- Governance and operational discipline across AI safety reviews, privacy/HIPAA awareness, vendor evaluation, legal/procurement workflows, and measurable rollout gates.
- Metrics-driven product execution using quality baselines, performance percentiles, capacity signals, scorer disagreement, and document-level impact to guide tradeoffs.
- Cross-functional delivery in high-ambiguity environments spanning PM, Design, Research, SRE, QE, Legal, Procurement, and partner engineering teams.

Education

- **Master of Business Administration (MBA)**, Marketing Concentration - Louisiana Tech University, Winter **2027**
- **Graduate Certificate, Business Administration** - Louisiana Tech University, May **2026**
- **Bachelor of Science (B.Sc.)**, Systems and Bio-Medical Engineering - Cairo University, Cairo, Egypt

Certifications and High-Visibility Training

- **IBM AI Product Manager Professional Certificate | IBM | 6/25/2024**: 10-course professional certificate covering AI product strategy, foundation models, prompt engineering, generative AI applications, stakeholder collaboration, AI-powered product planning, and launch practices.
- **Six Sigma Green Belt | University System of Georgia | 5/2/2024**: Four-course specialization covering advanced Define, Measure, Analyze, Improve, and Control phases; supports process improvement, quality systems, operational measurement, and execution discipline.
- **Privacy Law and HIPAA | University of Pennsylvania | 3/25/2024**: Healthcare privacy and regulated-data training relevant to AI systems, PHI/PII awareness, sensitive workflows, responsible product delivery, and risk-aware customer conversations.
- **AWS Certified Cloud Practitioner; DevOps on AWS | AWS/Coursera | 2024**: Cloud fundamentals, cloud-native delivery, CI/CD practices, deployment patterns, and AWS service fluency for AI infrastructure and platform programs.
- **Microsoft Fundamentals: AZ-900, AI-900, SC-900, DP-900 | Microsoft**: Azure cloud, AI, security/compliance, and data-platform foundations supporting Azure AI infrastructure, data governance discussions, and cloud architecture alignment.
- **IBM IT Scrum Master Professional Certificate | IBM | 6/22/2024**: Agile execution, sprint planning, stakeholder communication, backlog management, team operating cadence, and delivery process improvement.
- **Virtualization, Docker, and Kubernetes for Data Engineering | Coursera | 4/5/2024**: Containerization, virtualization, and orchestration foundations for platform, data engineering, reproducible environments, and service deployment discussions.
- **Neural Networks and Deep Learning | Coursera | 4/14/2023**: Deep learning fundamentals and neural-network concepts supporting AI/ML product judgment, model evaluation conversations, and applied GenAI leadership.
- **Introduction to Software Engineering | IBM | 6/22/2024**: Modern software engineering foundations that reinforce SDLC, design, testing, deployment, and engineering process vocabulary.
- **PMP Certified (Expired) | PMI | 9/18/2005**: Formal project-management foundation with long-running application across complex software, platform, cloud, and AI delivery programs.

Selected AI, Platform, and Governance Themes

- AI-first product leadership across Adobe and Moderna, spanning agentic typography, LLM productivity systems, multimodal workflows, reusable APIs, and model-backed evaluation loops.
- Workflow automation and agent tooling through MCP integrations, AI-assisted triage, Jira/story clarity analysis, scoring comparison, dashboard reviews, and automated project checkpoints.
- Quality and evaluation discipline connecting Six Sigma training, scorer calibration, disagreement analysis, document-level impact tracking, regression baselines, and rollout gates.
- Regulated and responsible AI awareness from Moderna healthcare experience, Privacy Law and HIPAA training, Adobe Ethics and AI Safety reviews, and sensitive-data workflow design.
- Cloud AI infrastructure execution across AWS and Azure, including deployment patterns, resource readiness, API integration, observability, and platform support for GenAI experiments.
- Cross-functional executive communication translating ambiguous AI/ML work into priorities, risks, metrics, capacity decisions, and stakeholder-ready product narratives.