

POOJA SINGHAL

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SUMMARY

Strategic Technical Program Manager with 11+ years of experience driving cross-organizational AI/ML, API integration, knowledge platform, and large-scale technology programs at Twilio, Affirm, and Amazon. Track record of building organizational operating models -- shaping multi-workstream strategies across engineering organizations, designing governance frameworks and operating cadences, and serving as a force multiplier for VP-level leadership. Combines deep technical fluency in AI/ML systems, distributed infrastructure, and data platforms with executive-level stakeholder management and influence without authority in highly regulated, high-stakes environments.

EXPERIENCE

Twilio, Inc.

Senior Technical Program Manager - *Conversational AI*

Jan 2025 - Present

- Shaped the program strategy and operating model for Twilio's real-time AI/ML platform (50K+ daily sessions), unifying 7 concurrent workstreams -- analytics, latency reduction, multilingual expansion, quality framework, vendor integrations, low-code enablement, and voice quality -- under a single roadmap. Aligned 5 engineering squads, data science, legal, compliance, and external vendors from roadmap definition through GA launch, driving 30% platform adoption growth.
- Owned a \$1.4M AI vendor transition program, migrating real-time spam detection (millions of daily messages) from a legacy rule-based system to an ML-driven platform. Designed the evaluation framework: structured 3-vendor POC on 10K annotated samples, defined quantitative KPIs (precision, recall, false positive rate), and established go/no-go thresholds. Drove a phased rollout (sample --> stage --> production) with bi-weekly model feedback loops -- delivering 88% accuracy (+28% vs. legacy), <5% false positives, ahead of peak traffic season.
- Defined the evaluation methodology and led cross-functional testing for Voice Activity Detection (VAD) models across annotated and live traffic scenarios. Established performance benchmarks, drove the vendor selection decision, and managed the migration -- reducing false turn-end interruptions by 77% and improving average handle time by ~22 seconds per call.
- Established governance cadences, executive dashboards, risk/RAID reporting, and escalation protocols across all platform workstreams, enabling fast decision-making for leadership across legal, compliance, and executive sponsors.
- Led 0-to-1 program for Conversation Intelligence, an AI-powered cross-channel analytics platform. Coordinated cross-functional discovery, authored the PRD, defined the technical architecture requirements, and established the delivery roadmap for generative insights, sentiment analysis, entity recognition, and conversation summaries.

Affirm, Inc.

Senior Technical Program Manager

Nov 2023 - Dec 2024

- Directed the Peak Season infrastructure scaling program for Amazon, Apple, Shopify, and Walmart partnerships -- engineering systems to sustain 50x baseline traffic during Prime Day, iPhone launches, and BFCM. Defined capacity models, orchestrated load-test cycles, and built incident-response readiness across 8 engineering teams -- enabling ~\$2B in GMV with zero critical incidents.
- Spearheaded a \$12M cross-organizational infrastructure cost-optimization initiative spanning streaming pipeline migration, log optimization, and service re-platforming. Built the executive business case with quantified ROI, secured buy-in across 3 engineering organizations, negotiated resource reallocation, and accelerated delivery by 6 weeks ahead of schedule.
- Architected the organizational OKR planning cadence in partnership with executive leadership -- designing quarterly goal-setting rhythm, cross-org alignment sessions, KPI frameworks, and tracking mechanisms that drove organizational efficiency and transparent performance reporting across the engineering organization.
- Designed a compliance issue-management governance framework and automated audit dashboard, establishing SLAs, escalation rules, and aging thresholds. Improved resolution efficiency by 70% and gave leadership real-time visibility into regulatory risks carrying millions in potential fines.

Amazon

Technical Program Manager II

Mar 2020 - Aug 2023

- Served as the TPM lead for the launch of Amazon Pharmacy -- one of Amazon's most complex, regulated product launches. Owned end-to-end technical enablement of two fulfillment centers (Austin, Phoenix), orchestrating across product, engineering, pharmacists, 3 technology vendors, and legal/compliance under strict HIPAA/PII/PHI requirements. Established operating procedures, change control governance, and SLA management. Delivered 2.5 months ahead of schedule.
- Architected a \$10M/year platform migration program (Snowflake to Redshift, Looker to QuickSight) across 20+ customer teams (~800 tables). Designed a phased rollout with PoC validation, data-lake architecture, and customer sign-off gates -- achieving zero disruption to downstream consumers.

- Applied data-driven root-cause analysis (NLP n-gram analysis on 1 year of JIRA defect data) to uncover that a single error class caused 40% of all vendor bugs. Built an automated sync mechanism that eliminated the error class, reducing vendor bug rate by 30%.
- Established a vendor software delivery lifecycle governance framework for 3 pharmacy tech vendors, standardizing quality gates, staging requirements, upgrade runbooks, and rollback procedures -- reducing upgrade cycles from 8 to 5 hours and cutting unplanned downtime by 90%.
- Certified 3 major internal applications as an Amazon Application Security Certifier, conducting line-by-line code reviews to prevent sensitive data leaks in production environments.

Vivint Smart Home

Project Manager Scrum Master II

July 2019 - Mar 2020

- Resolved a critical system failure (PIN/Password update at 60% success rate) by leading cross-functional root-cause analysis and implementing API retry logic, synchronous fallback, and idempotent request handling -- achieving 99% success rate and 30% reduction in support tickets.
- Introduced Scrumban methodology across the CoreApps vertical, reducing delivery timelines by 20% and defects by 40%. Scaled the methodology to 5 additional teams across the organization.

IBM India Pvt. Ltd.

Senior Business Analyst / Application Developer

Mar 2014 – Aug 2018

- Led a cross-functional agile team (6 engineers) to launch MobileBOND, an enterprise mobile application, reducing customer care load by 15% and delivering \$96K in annual savings. Automated regression testing, cutting dev+QA cycle time by 67%.

Adobe India, Gurgaon, India

IT Consultant

Sep 2012 – Feb 2014

- Implemented process improvements including a ticket classification system, improving resolution speed by 20% and driving \$20K in annual savings.

CORE SKILLS

- **Program Strategy & Governance:** Cross-organizational program leadership, influence without authority, technical roadmap strategy, cross-functional Engineering/Product/Design alignment, multi-year roadmaps, operating cadence and governance framework design, API integration programs, knowledge platform programs, phased rollout strategy, vendor evaluation and migration, PDLC governance, risk/RAID management, OKR/KPI frameworks, executive reporting and dashboards, launch readiness reviews, capacity planning, incident response
- **AI/ML Program Delivery:** ML model evaluation frameworks (precision, recall, WER, false positive rate), AI vendor POC design and selection, model deployment and phased rollout, AI/ML systems (LLM, GenAI, ASR, NLU, TTS, VAD), responsible AI and compliance, agentic AI program management
- **Technical Domains:** Real-time distributed systems, API architectures and platform infrastructure, data platform migrations, streaming pipelines, compliance-heavy environments (HIPAA, GDPR, SOC 2, PCI), system architecture, application security
- **Engineering & Data:** SQL, AWS, Python, Java, Snowflake, Redshift, Tableau, QuickSight, CI/CD pipelines, WebSocket APIs, REST APIs, Agile, SAFe

EDUCATION

University at Buffalo, The State University of New York, Buffalo, NY

June 2019

M.S. in Management Information Systems

Uttarakhand Technical University, India

July 2012

B.Tech in Information Technology

CERTIFICATIONS

- Certified SAFe 4.0 Agilist by Scaled Agile
- Certified Associate in Project Management (CAPM) by PMI
- Certified Scrum Master (CSM) by ScrumAlliance
- Certified Scrum Product Owner (CSPO) by ScrumAlliance
- Oracle Certified Java Professional 6
- DB2 9 Fundamentals by IBM
- Application Security Certifier by Amazon