Aryaman Pathania

U.S. Citizen
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Full-stack engineer with 3+ years leading ideation, design, and delivery of resilient, low-latency distributed systems at Amazon. Proven self-starter with experience building production tools from agentic AI workflows to customer-facing products end to end, with strong release discipline and rapid, user-driven iteration

EDUCATION

Carnegie Mellon University *B.S. in Mechanical Engineering; Computer Science Minor*   **Pittsburgh, PA**
Awards: Goldsmith Award: Best Overall Capstone Project   *Dec 2021*

WORK EXPERIENCE

Amazon *Software Development Engineer II*   *March 2024 - Present*

- Designed and deployed AI-powered feedback loop system serving 150k+ CSAs daily, using React/TypeScript frontend and AWS/Python backend to transform unstructured agent feedback into actionable engineering tickets
- Developed vector-based issue clustering through iterative Jupyter notebook experimentation, utilizing Cohere v3 embeddings and AWS OpenSearch vector db to reduce ticket noise by 66%
- Halved clustering pipeline runtime 12m → 6m by eliminating duplicate S3/OpenSearch reads, de-duping re-embeddings, and standardizing cluster-merge logic to persist aggregates (avoiding repeated aggregation passes)
- Augmented clustering and routing with app-specific context RAG, semantic categories derived from thousands of reports, error codes, and components selected by agents on the front end to achieve 90% rate of cluster routing
- Managed GraphQL validation service at 1,800 TPS with 0.02% error rate
- Maintained the release process for our core customer-service app – acceptance tests, multi-stage gates (dev, gamma/canary, pre-prod, prod), automated metric-based rollbacks – enabling frequent, low-risk releases.
- Maintain an authentication micro-service processing 30 TPS per region with sub-200ms latency times, improving security and login reliability
- Built CI/CD pipelines (AWS CDK) with 1,000+ automated tests and approvals based on real-time data, catching regressions early to sustain 99%+ uptime for Tier 1 Amazon services
- Architected a centralized alarm system and SOP across multiple services, enabling proactive monitoring that reduced incident volumes by 28%
- Facilitate incident response by troubleshooting and resolving complex service issues through code fixes, rollbacks, or stakeholder coordination
- Proposed and secured org-wide approval for AC3 Context API — a vector DB of package ownership and architecture docs enabling LLM-powered developer queries, garnering stakeholder support and dev resources
- Point of contact regarding design choices, access requests, tech campaigns, and bug reports during week-long on-call shift with 24/7 availability
- Mentored junior engineers and conducted 15+ technical interviews, driving team growth

Amazon *Software Development Engineer I*   *August 2022 – March 2024*

- Owned release management for Tier 1 service handling customer service for millions of customers globally
- Reduced false positives in the Tier 1 service's global error alarm by 75% with root cause analysis
- Built observability dashboards tracking releases across 80+ pipelines and service health metrics, enabling non-technical stakeholders to monitor system performance and make data-driven decisions

West Monroe Partners *Data Engineering and Analytics Consulting Intern*   *June 2021 – Aug 2021*
Mars, Inc. Supply Chain Advanced Analytics Team *Data Engineering Intern*   *May 2020 – Aug 2020*

PROJECTS

Execute (CTO)   *Dec 2024 – Present*

- Co-founded mission-driven platform to combat social media addiction through behavioral intervention design
- Leading technical development of community-driven action platform with progress tracking, gamification, and collaborative features

JMP High (Agentic JMP)   *Feb 2025 – March 2025*

- Built a near-real-time NLP→JSL compiler for JMP, enabling users to interface with JMP via chat-style UI
- Agent autonomously plans and executes JSL commands, completing hours of human work in just minutes

ADDITIONAL INFORMATION

Technical Skills:	Python · TypeScript · JavaScript · Java · Ruby · MATLAB · React · Redux · Jupyter · Vector search · Embedding-based retrieval · AWS (Lambda, CDK, DynamoDB, S3, CloudWatch, CloudFormation, OpenSearch, Glue, SageMaker, Bedrock) · REST · WebSocket · Spark SQL · Agent development · Supabase · Firebase
Activities:	Le Cordon Bleu – Basic Pastry, Carnegie Mellon Water Polo (President Aug 2018-Aug 2019), Dedicated woodworker
Language Skills:	Conversational Mandarin, Conversational Hindi, Novice French