Ankur M. Trapasiya

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SUMMARY

Lead software engineer specializing in **distributed systems, payments and quantitative finance**, with 13 years at Mastercard, Amazon (AWS and Amazon AI) and Morgan Stanley. Builds high-scale, fault-tolerant platforms for fraud decisioning, cloud billing, conversational AI and securities settlement: **$4B+** daily notional settled, **80%** lower P99 latency, ∼**$5M/year** saved. Now leads Authentication Decisioning for **card-not-present fraud prevention** at Mastercard and drives AI adoption across **100+ engineers**. M.S. Computer Science, Georgia Tech.

EXPERIENCE

Mastercard Technologies Canada, Vancouver
Sep 2025 – Present

Lead Software Engineer, AI & Decision Product Enablement

Lead for 3 teams, 29 engineers in Vancouver (12) and Dublin (17): infrastructure, applications and modernization.

Authentication Decisioning lead: card-not-present (CNP) fraud prevention

- Leading the **full-platform AWS migration** and modernization: monolith to multi-AZ microservices (gRPC; async boundaries around IBM ODM, XGBoost models, GemFire); targets ∼60% efficiency and ∼80% productivity gains.
- Own Token Provisioning Insights: real-time risk scoring for wallet tokens against **$600M+** projected fraud.

AI and developer productivity

- Built the org's agentic AI repository (skills, MCP tooling for Splunk, Jira and Teams, guardrails), used daily by **100+ engineers** and saving an estimated **10,000+ hours a year**; moving to platform-team ownership.
- Automated incident triage (∼1 h saved per incident) and removed a recurring release bottleneck with AI (∼1–2 weeks saved per release); building the team's AI engineering harness for an AI-native SDLC.
- Championed infra-level prompt engineering, adopted by **5+ teams**; collaborating across Mastercard on AI standards.

Narvar Inc.
May 2025 – Sep 2025

Senior Software Engineer II, Notify Platform

- Slashed infra cost ∼**$800K/month**, shrinking **200+ pods to under 10**, via event-driven CQRS on Pulsar.
- Engineered predictive autoscaling (custom HPA, Kyverno) and event-sourced, idempotent order state machines.
- Reduced MTTR with a **chaos-engineering** framework injecting latency, partitions and failures.
- Migrated retailers to a new rules engine with **zero customer impact** via shadow traffic and dual writes.

Amazon Web Services, Vancouver
Oct 2021 – Nov 2024

Software Engineer II (L5), Amazon AI and AWS Commerce Platform

Team of 11 engineers. Drove cross-organization projects end to end, from long-term technical vision to new product launches.

- Launched AWS Marketplace financing with PNC Bank (**re:Invent 2024**) across **3 orgs and ∼40 stakeholders**.
- Saved ∼**$1.2M/month** by merging two AWS billing platforms: ∼60% fewer ops tickets, ∼90% fewer spikes.
- Resolved a ∼**$57M/month** free-cash-flow deficit for large customers with an invoice-level credit-and-rebill engine.
- Saved ∼**$400K/month** with forecast-driven autoscaling across four Lex subsystems, replacing manual provisioning.
- Saved ∼**$450K/month** and eliminated ∼2 Sev2s/month by unifying conversational-AI canaries across 13 regions.
- Cut region-launch developer effort **60%** with an automated 5-day region-provisioning pipeline (IaC).

Morgan Stanley
Aug 2013 – Oct 2021

Senior Backend Engineer to Technology Lead, Operations Technology, Cash and Security Settlements

Technology Lead, Montreal (title: IT Associate) Sep 2017 – Oct 2021

Technology lead for 2 agile squads, 23 engineers in Montreal (8) and Mumbai (15).

- Cut P99 latency **80%**, scaled throughput **10**× and saved ∼**$5M/year** by replacing mainframe SSI distribution.
- Migrated Canada and Asia equity settlement (∼**1.5M transactions/day**) off the mainframe at 100% accuracy: 13 domain-driven services, strangler-fig cutover with parallel runs and automated reconciliation.
- Accelerated releases from monthly to bi-weekly; feature turnaround ∼**60%** faster (trunk-based CI/CD, Liquibase).

Senior Backend Engineer, Mumbai (title: IT Manager) Aug 2013 – Sep 2017

- Built Magnet's core, real-time OTC settlement: **$4B+ daily notional**, 7 asset classes, ∼40 markets, 70 currencies.
- Cut batch runtime **58%**, incidents 75% and manual resolution 90% with automated reconciliation.
- Delivered regulatory and FTT reporting for 80+ markets: **90%** less operational overhead, 100% compliance.

PROJECTS

Technical blog, ankurtrapasiya.com
Quantitative finance, machine learning

- Published **50+ posts** explaining quantitative finance and ML from first principles: risk-adjusted returns, portfolio optimization, trading costs, backtesting, tree ensembles, data leakage, bias–variance.

Agentic AI Homelab
NVIDIA GB10, llama.cpp, Open WebUI, Wolfram

- Run a **self-hosted agentic AI stack** on an NVIDIA GB10 Grace Blackwell workstation (ASUS Ascent GX10, 128 GB unified memory), serving open-weight Qwen and Llama models with llama-server.
- Customized Open WebUI for **fast proofs of concept**: custom tooling, knowledge bases, Wolfram integration.
- Deploy and experiment with new open-weight models and agent designs before applying the lessons at work.

EDUCATION

Georgia Institute of Technology, Atlanta, GA Aug 2026 – Expected Dec 2030
M.S. Computer Science, Computing Systems specialization
Relevant coursework: Machine Learning for Trading (portfolio optimization, CAPM, market simulation, tree ensembles)

Dhirubhai Ambani Institute (DA-IICT), Gandhinagar, India Jul 2011 – Jun 2013
M.S. Information Technology. CGPA 9.46/10, President's Gold Medal

Veer Narmad South Gujarat University, Surat, India Jul 2007 – May 2010
B.S. Information Technology. Aggregate 77.8%

TECHNICAL SKILLS

Languages: Java, Python, TypeScript, Bash, Linux
Distributed systems: Spring Boot, microservices, gRPC, Kafka, Apache Pulsar, Elasticsearch
Cloud and infrastructure: AWS, GCP, Kubernetes, Docker, Helm, infrastructure as code, CircleCI, ArgoCD
AI and machine learning: GitHub Copilot, agentic skills and MCP, llama.cpp, Open WebUI, tree ensembles, XGBoost
Data and observability: RDBMS (DB2, Sybase), Grafana, Datadog, Splunk

TALKS AND HONORS

2026 **Speaker, "Agentic Future" tech talk**, *Mastercard Dev Week*
2017 **Outstanding Delivery Award**, *Morgan Stanley*
2011 **Oracle Certified Professional, Java SE Programmer**, *Oracle*