APURV GAURAV

Patent-Backed AI Product Leader — Edge AI • LLM Safety • Deterministic Governance • Privacy-Preserving Systems

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EXECUTIVE SUMMARY

AI Product Leader with 12+ years driving safety, reliability, and deterministic governance for platforms serving **40M–70M+ devices**. Define **product strategy** and **technical architecture** for **edge inference, alignment guardrails**, and **telemetry-driven risk scoring**—shaping **VP/SVP** decisions for high-stakes releases. Lead execution across **50+ engineers** spanning Product, ML/DS, SRE, QA, Field Ops, and Security, aligning multi-quarter roadmaps and investment priorities. **Sole inventor** on **8 USPTO-filed non-provisional patents** across **deterministic AI safety, offline LLM inference, privacy engineering, and static code analysis**, each backed by production-grade prototypes.

LEADERSHIP HIGHLIGHTS

- Defined **Comcast's AI safety and rollout governance**, establishing **deterministic validation bars**, anomaly thresholds, and compliance gates across **40M+ devices.**
- Unified **50+ engineers across 6 orgs** (Product, ML/DS, SRE, QA, Field Ops, Security, Vendors) under a standardized reliability and AI-safety evaluation model.
- Reduced regression recurrence by **28%** and improved triage/recovery by **35%**, mitigating **multi-million-dollar SLA and customer-impact risks.**
- Developed deterministic rule-engine patterns and telemetry pipelines forming the foundation for **8 USPTO-filed** alignment-debugging and privacy-preserving architectures.
- Delivered VP/SVP decision briefs modeling **safety–latency–velocity tradeoffs** for high-stakes releases.

EXPERIENCE

Comcast — Philadelphia, PA

Product Lead — Intelligent Systems & Reliability | Mar 2021 – Present

- Owned the end-to-end **AI governance** for broadband and Wi-Fi platforms, defining deterministic safety bars, rollout gates, *validation heuristics*, and *compliance thresholds* across **40M+ devices.**
- Partnered with ML/DS teams to integrate *anomaly detection*, **telemetry-driven risk scoring,** and **latency heuristics** — cutting false positives and surfacing regressions earlier in the release cycle**.**
- Designed a **privacy-preserving logging layer** eliminating sensitive identifiers and strengthening audit posture across distributed telemetry pipelines.
- Directed execution across **50+ engineers**, aligning **multi-quarter reliability OKRs** and accelerating **AI safety investments** across SRE, QA, ML/DS, Field Ops, and Security.
- Built risk dashboards integrating operational telemetry, anomaly rules, and impact metrics — driving a **28% reduction** in high-risk regressions and **25% faster post-incident recovery.**
- Authored VP/SVP-facing briefs modeling **safety-latency-velocity tradeoffs** to guide rollout policy and investment decisions.

Product Manager — Data & Experimentation Platforms | Jul 2018 – Mar 2021

- Owned the roadmap for experimentation and telemetry platforms, transforming basic A/B testing into **reliability-aware decision tooling** for broadband and video.

- Launched end-to-end experimentation pipelines integrating insights into release decisions, reducing post-release defects by **30%**.
- Built **feature-impact prediction model** combining *operational metrics* and *experiment outcomes*, improving roadmap confidence by **25%**.
- Partnered with SRE/QA to define **ship/no-ship gates** driven by statistical thresholds, anomaly rules, and **customer-impact KPIs.**
- Scaled experimentation frameworks across orgs, standardizing how release risk and customer impact were measured.

Associate Product Manager — Systems Reliability & QA | Oct 2014 – Jun 2018

- Built test-driven deployment frameworks that cut post-release incidents **50%**; later adopted platform-wide.
- Designed multi-variant testing flows informing early **CX metrics** and launch decisions.
- Developed reproducibility metrics and log-analytics patterns that shaped later ML-based anomaly detection systems.

Software Engineer — Massachusetts Health Exchange Platform | Mar 2014 – Oct 2014

- Improved throughput by **40%** across **high-availability state platforms.**

USPTO PATENT PORTFOLIO (8 NON-PROVISIONAL APPLICATIONS)

Sole inventor on all **8 USPTO-filed non-provisional applications.**

Safety & Alignment Systems

- **AI Risk Navigator** — Real-time hallucination, bias, and latency risk tagging via deterministic rule logic.
- **Self-Healing Prompt Engine** — Deterministic prompt rewrites and safety guardrails for LLM outputs.
- **AutoJudge** — Offline, model-agnostic policy-evaluation engine architecture for content triage without retraining.

Privacy & Edge Intelligence

- **EdgeLLM V2** — Offline, privacy-first edge-deployed LLM architecture with self-forgetting memory and on-device alignment debugger.
- **LLM Code Safety Auditor** — Offline rule-based static code analysis and deterministic remediation engine.
- **AutoRedact AI** — Deterministic PII-redaction architecture for logs, documents, and structured data.
- **TraceSafe AI** — Content lineage and traceability architecture for AI-generated artifacts.
- **PromptPilot** — Telemetry-driven prompt experimentation and optimization platform.

Demos, architecture diagrams, and prototypes at www.apurvgaurav.ai.

SKILLS

AI & Governance: AI safety & alignment; deterministic rule engines; risk triage; privacy-preserving logging; telemetry-driven risk scoring; offline inference; RAG; embeddings; ONNX; quantization; XAI

Product Leadership: Vision & strategy; portfolio strategy; PRDs; KPIs/SLIs/SLOs; rollout governance; experimentation; risk-based go/no-go; cross-functional alignment; VP/SVP stakeholder management

Platforms & Systems: RDK-B; broadband; Wi-Fi/6GHz; DHCP; DSCP; CI/CD; observability; SLA/SLO design; high-availability distributed systems

Technical Tools: Python; FastAPI; Docker; Splunk; ElasticSearch; Next.js; Git; ONNX Runtime

EDUCATION

Doctor of Engineering (DEng) — Penn State (In Progress)

Master of Urban Spatial Analytics (MUSA) — University of Pennsylvania

Bachelor of Information Technology — AITR, Indore