Arpan Chatterjee

Software Development Engineer II at Amazon | Seattle, WA
Software Engineering | Applied AI & ML Platforms | Distributed Systems

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PROFILE

Software engineer at Amazon with 7+ years across production AI, ML platforms, and distributed systems. Owned engineering for a contract-intelligence application used by 50+ legal professionals; built self-service ML evaluation and led multi-tenant ad-serving architecture across 5-6 engineers. Combines backend depth, full-stack delivery, and product judgment from stakeholder discovery through operations.

EXPERIENCE

Amazon | Prime Video

Software Development Engineer II | Apr 2025 - Present | Seattle, WA

• Owned model deployment, backend, and frontend for an AI-powered contract-intelligence application used by 50+ legal professionals at Amazon; productionized infrastructure, access controls, and monitoring.

• Designed and built self-service ML evaluation: 10 production models and 80+ experimental versions, comparing accuracy, precision, recall, and F1 without platform-team intervention.

• Own end-to-end development of an audio-description planning and vendor-allocation platform: stakeholder requirements, UX, architecture, frontend, backend, ordering, and fulfillment tracking.

• Built localization recommendation pipelines for global studios and content partners; re-architected ~1.4 GB model-output processing, achieved a 99.91% validation pass rate, and integrated asset-generation ordering.

• Built a streaming UI-generation backend on Amazon Bedrock AgentCore; complex prompts completed in 67 seconds after previously timing out at 300+ seconds.

Amazon | Amazon Ads

Software Development Engineer II | Mar 2023 - Apr 2025 | Seattle, WA

• Architected and led Shared Cell implementation across 5-6 engineers. Established the standard multi-tenant production model, including isolation for throttling, logging, observability, and data access.

• Led live-event performance engineering at 15M+ concurrent-viewer scale. Improved a worst-case path 3x (75 to 225 TPS/host), reducing required capacity ~67%; broader work helped avoid an estimated $10-15M in seasonal TNF EC2 costs.

• Designed the AWS Graviton migration: 250 to 500 TPS/host, ~75% lower cost/request, and ~$1.4M projected annual EC2 savings without degrading latency.

• Built reusable backend capabilities for Prime Video, Freevee, Twitch, IMDb, Goodreads, Alexa, and live-sports launches, contributing to $100M+ in revenue impact.

Arpan Chatterjee | Experience continued

Amazon | Transportation Services

Software Development Engineer II | Aug 2022 - Mar 2023 | Seattle, WA

• Built a facility-operations visibility platform for warehouse managers to track package state and movement, identify shipments at risk of missing deadlines, and prioritize operational interventions.

Amazon | Prime Video India

Software Development Engineer II | Oct 2021 - Aug 2022 | Bengaluru, India

• Implemented Channels subscription e-mandates for RBI-required recurring-payment compliance and business continuity.

• Built Free Trial Eligibility Service capabilities to detect repeat free-trial abuse using duplicate payment methods and other customer signals.

Amazon | Prime Video India

Software Development Engineer I | Aug 2019 - Sep 2021 | Bengaluru, India

• Built payment-data migration and localization workflows supporting RBI data-residency requirements and recurring-payment e-mandates for Prime subscriptions in India.

• Contributed to the India Channels launch, including third-party onboarding such as Eros Now and Discovery+.

• Added Simplified and Traditional Chinese keyboard functionality to the Prime Video Living Room app.

National Instruments | Research & development

R&D Intern | Jan 2019 - Jun 2019 | Bengaluru, India

• Developed automation to generate electronic circuit designs from user-specified inputs, outputs, and computation requirements.

CAPABILITIES

Software & systems: Backend systems, full-stack applications, distributed architecture, multi-tenancy, performance profiling, capacity engineering, AWS.

ML & applied AI: Evaluation platforms, model-output pipelines, data-quality validation, AI-agent productionization, Amazon Bedrock AgentCore.

Technical delivery: Stakeholder discovery, UX and workflow design, architecture, cross-functional partnership, implementation, testing, deployment, onboarding, production operations.

AI-NATIVE ENGINEERING

Prototyping agent-driven software delivery from requirements and design through implementation and validation. Built independent validator-agent checks, blocking pre-review gates, and repository-specific rules to evaluate reduced human intervention with automated quality controls.

EDUCATION & LANGUAGES

B.E., Computer Science | Bangalore Institute of Technology | 2015-2019
English, Hindi, Bengali