

# SHANTANU BAL

Seattle, WA · (408) 609-8216 · shantanu.r.bal@gmail.com

Senior software engineer with 10+ years of experience building distributed, cloud-native backend systems at scale. Proven expertise in event-driven architectures, ML operations, and large-scale data platforms on AWS. Passionate about applying engineering excellence to financial products — currently building Horizon ([usehorizon.dev](https://usehorizon.dev)), an AI-powered platform democratizing financial market insights for everyday investors. Actively relocating to New York City.

## WORK EXPERIENCE

---

**Senior Software Engineer**, *Axon Enterprise, Inc.* *Sept 2025 – Present*

- Designed and implemented cloud services that ingest, enrich, and store License Plate Recognition (LPR) data streamed from edge devices in the field.
- Built multi-tenant indexing layer enabling fast search across large volumes of LPR records while preserving per-tenant data ownership and access controls.
- Integrated downstream consumers including hotlist hit alerting pipelines that notify operators in near real-time.

**Senior Software Engineer**, *Amazon.com Services LLC* *May 2022 – Dec 2024*

- Led design and development of the cloud data platform for Amazon Robotics, managing the lifecycle of ML models deployed to robotic work cells in Amazon's fulfillment centers.
- Led development of software for ML model training, data set generation and curation, continual retraining, deployment, and real-time performance monitoring.
- Designed sampling strategies for dataset labeling emphasizing diversity and annotation quality; addressed data drift and drove high ML model accuracy in production (mAP, F1).
- Led development of a first-of-its-kind A/B testing infrastructure for robotic work cells, enabling scientists and engineers to compare ML models and algorithms.

**Software Development Engineer**, *Amazon.com Services LLC* *Jan 2016 – Apr 2022*

- *Amazon Robotics* — Implemented and integrated Python micro-services into the orchestration workflow of robotic work cells (instance segmentation, grasping, outcome detection).
- *Prime Air* — Integrated the ship-with-drone option for the retail website (amazon.com).
- *Alexa* — Designed and implemented features for a platform allowing third-party developers to proactively introduce personalized content (monetization/skill upsell, smart-home integration, override system for testing, EU launch in Germany).
- *Device Services* — Built software platform to bootstrap new devices to Wi-Fi and Amazon accounts via Bluetooth; built iOS and Android libraries for Amazon phone apps to set up IoT devices.

**Software Engineer**, *Global Analytics India Ltd.* *May 2011 – May 2012*

- Developed Django (Python) web applications for the company's customer-facing financial products.

## EDUCATION

---

**Master of Science, Computer Science** — *University of Southern California*, Los Angeles, CA

**Postgraduate Diploma in Management** — *Indian Institute of Management*, Ranchi, India

**Bachelor of Engineering, Computer Science & Engineering** — *Anna University*, Chennai, India

## TECHNICAL SKILLS

---

Software Design · Object-Oriented Programming · AWS · Java · Python · TypeScript · SQL · Git · DevOps