

KOUSTAV RAY

PRINCIPAL
ENGINEER

GET IN TOUCH

Bangalore, India

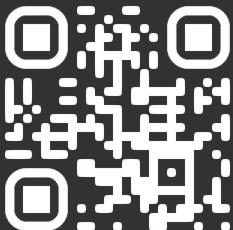
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PROFESSIONAL SUMMARY

Principal Engineer with 12 years of experience designing and scaling distributed systems, geospatial platforms, and cloud-native architectures. Currently leading OlaMaps platform at Krutrim, focusing on building location services as a core infrastructure component for India's sovereign AI ecosystem. Passionate about open-source contributions, technology innovations, and solving complex distributed systems challenges through elegant architectural design.

CORE COMPETENCIES

Architecture & Design: System Architecture | Microservices Design | Distributed Systems | Cloud-Native Architecture | Platform Architecture | Scalability & Performance Optimization

Technology Stack: Java | TypeScript | JavaScript | NextJS | Spring Boot | SQL | MongoDB | Redis | Elasticsearch

AI Systems & Tooling: Agentic AI Systems & Task Workflows | Agentic AI Assistant Design | Multimodal LLM-API Integration (Voice/Text + Actions) | AI-Enhanced Code Review & Documentation | AI-Augmented Data Labeling & Validation Pipelines

Geospatial & Location Intelligence: Geospatial Data Systems | OSM/GeoJSON Processing | PostGIS | Real-time Location Services | Map Data Engineering | POI Systems | Building Footprint Data

Cloud Infrastructure & DevOps: AWS (EC2, S3, EMR, RDS, Lambda, API Gateway) | Kubernetes Orchestration | Docker & Container Orchestration | Helm Charts

Big Data & Streaming: Apache Spark | Apache Kafka

Leadership & Collaboration: Technical Leadership | Team Mentorship | Cross-functional Collaboration | API Design & Documentation

PROFESSIONAL HISTORY

KRUTRIM AI (Ola Krutrim)

Principal Engineer, OlaMaps | 2023 - Present

- Built OlaMaps Platform from the ground up, now powering maps.olakrutrim.com, as the core geospatial intelligence platform for Krutrim's AI ecosystem.
- Architected an AI-assisted geospatial data editor, enabling high-precision map data creation and curation with intelligent address parsing, normalization, and structured entity extraction for India-scale location datasets.
- Designed real-time location systems for mobility, delivery, and scooter use cases with stringent low-latency requirements.
- Scaled AI-enhanced data pipelines for ingesting and enriching POI, road networks, and building footprints across India using automated ML-driven data classification, validation and spatial clustering.
- Modernized core maps components to align with current software engineering practices and improve platform reliability.
- Drove coding best practices through structured code reviews using Gemini-assisted review workflows, GitHub Actions CI/CD, and SonarQube quality checks.
- Mentored engineers, authored technical documentation and conducted interviews.

HERE TECHNOLOGIES (HERE Solutions India)

Lead Engineer | October 2017 - October 2023

- *Places - Global POI Platform-* Architected large-scale, cloud-native POI data pipeline on AWS processing 10TB+ geospatial data daily and managing 500M+ global map entities; improved data accuracy to 95%+ and reduced duplicates by 40%.
- *HD Map alignment tool-* Designed and delivered a full-stack map data processing tool of 100K+ miles of imagery per day, boosting operational efficiency by 25% with automated job allocation and real-time monitoring.
- *Traffic Intelligence Platform-* Led re-architecture of real-time traffic intelligence systems and geospatial data platforms serving global automotive and mapping applications; achieved 99.9% uptime and 35% reduction in false detections.

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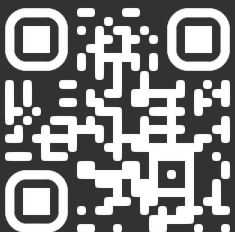
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ZEPO TECHNOLOGIES

Software Engineer | December 2016 - September 2017

- *Zepo E-commerce Platform* - Designed and developed microservices for store creation, product catalog management, order processing, and third-party integrations across payment gateways and shipping providers.
- *Payment Gateway Integration* - Implemented seamless payment processing with automated reconciliation and settlement workflows, improving transaction reliability and reducing manual intervention.
- *Courier Aggregation Platform* - Optimized CI/CD pipelines and automated deployments, cutting release cycles from weekly to daily and enhancing system delivery efficiency.

ZYCUS INFOTECH

Software Engineer | June 2014 - December 2016

- *Rainbow - Data Representation Tool*- Designed and developed interactive visualization modules for executive dashboards and analytical reporting. Implemented a WebSocket-based real-time update framework supporting 500+ concurrent users for live data monitoring.
- *Seat Management System*- Engineered an internal HR seat reservation platform, enabling seamless end-to-end booking workflows. Optimized performance and scalability, supporting growth from 100 to 1,000 active users without degradation.
- *Geographic Disaster Alert Beacon* - Created a real-time disaster alert platform (hackathon winner) aggregating data from UN feeds, global news sources, and social media signals. Built a multi-stage data processing pipeline achieving over 95% accuracy in event detection.

EDUCATION

Master of Technology (M.Tech) in Software Systems

Birla Institute of Technology and Science (BITS), Pilani | 2019 - 2021

Bachelor of Technology (B.Tech) in Computer Science

Techno India College of Technology, Kolkata | 2010 - 2014

12th (ISC), Science

St. Thomas' Boys' School, Kidderpore, Kolkata | 2007 - 2009

10TH (ICSE)

St. Vincent's High & Technical School, Asansol | 2007

LANGUAGE PROFICIENCY

English (Fluent) | Bengali (Native) | Hindi (Proficient)

INTERESTS & COMMUNITY

Technical Community: Open source contributions (GitHub) | StackOverflow (1000+ reputation) | Technical writing (Published in Magazines) and blogging | Conference speaking

Personal Interests: Scuba diving and snorkeling | Wildlife photography | Trekking and nature exploration | Travel | Reading | Numismatics | Sketching

DATE OF BIRTH

5th February, 1991