Avi Sihag Senior Software Engineer | B.Tech (EE), IIT Delhi

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Work Experience

Senior Software Engineer, *Mrsool — Ride Hailing Platform* 04/2025 – Present | Saudi Arabia

- Among **3 founding engineers** who operationalised Mrsool's ride-hailing platform from 0→1 in under 6 months; peak throughput of **5,500+ completed trips/day** across **10,000+ drivers** and **145,000+ users**.
- Architected the complete **transactional lifecycle state machine** (request → dispatch → enroute → arrival → settlement) with cross-service orchestration; underpins **385,000+ trip transactions**.
- **Sole author** of a low-latency bidirectional messaging system (RFC through production): Kafka + Redis Streams + ScyllaDB; idempotent delivery, event replay, and stateless mobile reconnection.
- Integrated **HyperPay payment gateway** and implemented instrument tokenisation layer; **7,400+ registered instruments** across **6,500+ principals**, coupled to the fare settlement lifecycle.
- Developed a **multi-dimensional anomaly detection system** across 5 heuristic fraud signals; surfaced **9,000+ flagged trips** (2.3% of platform volume) for operational triage.
- Shipped **principal revocation** (JTI rotation) and geospatially verified **penalty reversal** with atomic billing rollback.
- Hardened infra with **connection pools** and **circuit-breaker fault-isolation** — 0 cascading failures under peak load.
- Architected **Butler 2.0** — an LLM-powered conversational commerce service; **stateless Go/Node.js WebSocket gateway**, **NATS JetStream** (persistent), Redis session management, and **LangChain + GPT-4 orchestration**.

Founding Engineer, *Adora Inc., Japan* 09/2023 – 03/2025 | Tokyo, Japan

- Built parental control and child safety app with 4-person team — **30K+ MAU, 100K+ installs** across Japan & Korea.
- Raised **crash-free rate from 40% to 95%**; integrated Shorebird cutting patch release time by **40%**; battery optimisations reduced power consumption by **45%**.
- Shipped Unsafe Text Detection, Purchase Blocking, Line Voom Block; Korean localisation; Intercom migration (**25% issue resolution boost**, **15% drop-off reduction**).
- Handled Firebase & GCP infra including Cloud Functions; designed app flavours and CI/CD (Codemagic) for simultaneous prod/stage/dev builds.
- **Tech:** Dart, Flutter, TypeScript, Firebase, GCP, Cloud Functions, FCM, Amplitude, Shorebird, Codemagic.

SDE-1 — Fullstack Engineer, *Blinkit (Zomato)* 07/2022 – 03/2023

- **Catalogue Management:** built cached Django REST APIs for product data retrieval by downstream microservices; React frontend for content team with onboarding automation; cron for inventory limit manipulation.
- **Print-as-a-Service:** end-to-end across backend contracts, Android app, and multiple internal services — launched at **600 avg daily orders** across 5 dark-store polygons in 2 cities.

Additional Experience

Backend Engineer, *Freelance — Blockchain NFT Marketplace (Golom)* 06/2023 – 08/2023

- Built cached Django APIs with rate-limited data streaming and efficient aggregation queries.
- Deployed Polygon node, ElasticSearch Docker cluster, and InfluxDB on custom AWS AMIs; benchmarked both for time-series interval charts.
- **Tech:** Django, Redis, AWS, Docker, PostgreSQL, ElasticSearch (ELK), InfluxDB, Solidity.

Full Stack Development Intern, *String Ventures* 06/2021 – 07/2021

- Built fully responsive website using Next.js SSR, AWS Amplify, and Cashfree; achieved **26% faster rendering**.
- **Tech:** React, Next.js, AWS Amplify, Cashfree, Material-UI, Vercel.

Skills

Languages & Backend — Go, Python, Django, Flask, JavaScript • **Data & Messaging** — Kafka, Redis, NATS, ScyllaDB, PostgreSQL, ElasticSearch, DynamoDB • **Cloud & DevOps** — Docker, Kubernetes, GCP, AWS, Firebase, AWS Lambda, API Gateway, Git • **Frontend & Mobile** — React, Next.js, Flutter, TypeScript • **AI/ML & Payments** — LangChain, LLM Orchestration, Prompt Engineering, HyperPay • **Architecture & Design** — Distributed Systems, Object Relational Mapping, Web Application Development, Secure API-driven Microservices, Agile Scrum

Positions of Responsibility

- **Technical Coordinator**, Student Incubation Cell, IITD [2020–21] — built official club website in MERN stack used as communication platform for startups and alumni.
- **Project Manager, Enactus IIT Delhi** — Semi-Finalist, World Cup 2019 (San Jose, USA) among 36 countries; **Winner**, National 2019 & Semi-Finalist National 2020 among 109 colleges; Empressario B-Plan winner, IIT KGP (₹1L prize).
- **Weightlifting Vice Captain**, Vindhyachal Hostel, IIT Delhi [2019–20].
- **KVPY 2017 SX Stream Scholar** — selected by IISc Bangalore under Dept. of Science & Technology, Govt. of India.

Projects

Dynamic Facial Emotion Recognition, *Prof. Tapan Kumar Gandhi, IITD* 09/2021 – 12/2021
Extended Part-Based Ensemble network from static images to video in unconstrained environments; Time Distributed CNN-LSTM on CK+ / MMI datasets.

WhatsApp Dialer, *Freelance (Mr. Daniel Malka, CellularPartner)* 03/2021 – 05/2021
Flask backend + Python / AutoIt automation scripts to connect WhatsApp calls on demand; call-stats API logging to MySQL.