

PRIYANSHU AGARWAL

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EXECUTIVE SUMMARY

Senior Software Engineer with **5+ years** of experience building **distributed backend systems**, large-scale data processing platforms, and AI-powered enterprise applications. Strong expertise in Python, distributed systems, backend architecture, cloud-native infrastructure (AWS, Kubernetes, Terraform), and LLM orchestration. Led engineering execution across multiple product pods spanning web, mobile, and platform teams. Built production systems handling **50,000+ high-resolution images per workflow**, reduced distributed processing costs by **90%**, delivered enterprise AI workflows using LangChain, LangGraph, and RAG pipelines, and shipped Aereo's first mobile product end-to-end. Co-inventor on a granted analytics patent.

TECHNICAL SKILLS

Languages:	Python, TypeScript, JavaScript, SQL
Backend:	Django, FastAPI, NestJS, REST APIs, Microservices
Distributed Systems:	AWS Batch, Async Workflows, Distributed Processing, Event-Driven Systems
Cloud & Infrastructure:	AWS, Kubernetes, Terraform, Docker, GitLab CI/CD
Databases:	PostgreSQL, PostGIS, Redis, pgvector
AI / LLM Systems:	LangChain, LangGraph, RAG, vLLM, PyTorch
Frontend:	React, TypeScript, Redux, CesiumJS

PATENTS

A System For Geospatial Data Analytics And A Method Thereof	Patent
Co-invented the core backend architecture of a distributed geospatial analytics platform.	Oct 2025

PROFESSIONAL EXPERIENCE

Aereo	Bengaluru, Karnataka
<i>Senior Software Development Engineer (SDE-3)</i>	Jul 2024 – Present

- Leading engineering execution across **Aereo Cloud Web**, **Aereo Go Mobile**, and the **Infrastructure Platform Team**, driving architecture, technical direction, and cross-functional delivery across backend, frontend, and platform initiatives.
- Led and shipped **Aereo Go v1**, Aereo's first dedicated mobile product, coordinating backend, mobile, and DevOps teams from inception through production launch.
- Architected and delivered **Aereo Cloud-in-a-Box**, enabling secure air-gapped enterprise deployments for UAE mining customers through Kubernetes-based on-premise infrastructure and cloud-agnostic runtime abstractions.
- Designed a **CloudManager Abstract Factory** unifying AWS, Azure, and Kubernetes integrations behind a single backend interface, enabling **cloud-agnostic enterprise deployments** and reducing platform coupling.
- Built production AI assistant workflows using LangChain, LangGraph, and RAG pipelines over geospatial datasets; designed **deterministic inference orchestration** and **context management workflows** for constrained-context LLM systems.
- Led a cross-functional team of **6 engineers and a Data Science team** to deliver **HRA** and **Smart Detect** AI features end-to-end — including a Docker-outside-Docker GPU POC to enable AI workloads on constrained on-premise infrastructure.
- Designed and scaled distributed photogrammetry systems handling **50,000+ high-resolution images per workflow**; resolved production failures involving **50GB+ orthomosaic processing** and terrain generation pipelines.
- Designed and shipped Datamine Plugin v2 enabling **bi-directional synchronization** between Aereo Cloud and Datamine Studio, unblocking a **critical enterprise mining integration**.
- Reduced infrastructure provisioning time by **97%** through reusable multi-environment Terraform provisioning workflows integrated with CI/CD deployment systems.
- Established structured onboarding through Aereo LMS; conducted interviews and mentored engineers across SDE-1 through SDE-3 and DevOps hiring pipelines.

<i>Software Development Engineer (SDE-2)</i>	May 2022 – Jul 2024
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- Delivered **10+ major features in 3 months** for enterprise onboarding of **Coal India Limited**, including 3D digitization workflows, authentication systems, distributed geospatial APIs, and terrain-processing pipelines.

- Reduced terrain-processing AWS costs by **90%** by redesigning **distributed synchronization pipelines** using multiprocessing, threaded workers, and direct S3 streaming — eliminating EFS caching overhead entirely.
- Architected and deployed **Terraform IaC infrastructure from scratch** covering ECS, RDS Multi-AZ, EC2, CloudFront, NAT Gateway, and Secrets Manager; hardened production AWS network with private subnets, Jump Servers, and IAM policies to eliminate public access exposure.
- Improved deployment turnaround time by **50%** by setting up autoscaled GitLab Runner infrastructure from scratch, sustaining **10–15 parallel pipelines** with automated CI/CD execution and self-hosted Terraform deployments.
- Built **end-to-end testing infrastructure** from scratch with dedicated CI/CD integration, improving deployment confidence and catching regressions before enterprise releases.
- Architected scalable asynchronous backend workflows using Python, Django, and distributed task orchestration; designed flexible REST APIs with **dynamic response shaping** to support complex frontend workflows.
- Implemented authentication systems, SSO integration, security headers, and resolved VAPT findings across distributed backend services and enterprise deployments.
- Refactored large-scale geospatial processing architecture improving **throughput, scalability, and operational reliability** across production systems.

Software Development Engineer (SDE-1)

Sep 2021 – May 2022

- Directly unblocked **Tata Steel** enterprise deployment by implementing secure self-hosted geospatial delivery systems satisfying government data residency requirements; single-handedly managed all infrastructure communication and v1 rollout.
- Built terrain tile generation systems, COG generators (benchmarked EC2 instance types for performance/cost), MBTiles extraction workflows, and vector tile servers for large-scale geospatial visualization.
- Built S3-to-S3 export Lambda enabling ORI/DSM data portability across processing and analytics platforms; designed foundational event-driven AWS Batch job orchestration systems.
- Architected foundational frontend systems adopted as **team-wide engineering standards**; published the team's first private npm module (`@aus-platform/cesium`) for scalable geospatial frontend development.

SalesHandy

Software Engineer

Ahmedabad, Gujarat

Jan 2021 – Aug 2021

- Developed backend APIs and distributed campaign management workflows using NestJS, TypeORM, and PostgreSQL.
- Optimized high-traffic SQL queries reducing **production database load** and improving API responsiveness for customer-facing workflows.
- Introduced automated testing infrastructure using Jest, improving deployment reliability and engineering confidence.

AWARDS

Spotlight Award – Aereo

Sep 2022

Recognized for contributions to **backend scalability, distributed systems reliability**, and enterprise platform delivery.

EDUCATION

S.G.T.B Khalsa College, Delhi

B.Sc (Hons) Computer Science

Jul 2017 – Oct 2020