

Jagrit Pareek

Full-Stack & Platform Engineer · Cloud, real-time alerting & applied AI

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SUMMARY

Full-stack and platform engineer with 3+ years across two sister companies, Glocol Networks (USA) and PeopleSense (India), taking products from prototype to production: multi-tenant React and Next.js dashboards, TypeScript and Rust backend services on Postgres/PostGIS, AWS and Docker infrastructure as code, and real-time alerting pipelines for USGS ShakeAlert, FEMA IPAWS, NDMA and MeteoAlarm. Works AI-first, directing coding agents through tested, reviewed pull requests. As Chief Product Officer of PeopleSense's India entity (declined a Director seat to stay hands-on), owns product direction and delivery to metro-rail and government clients. Remote from India, or open to relocation.

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, Rust, SQL, Bash

Frontend & Mobile: React, Next.js, Vue / Nuxt, React Native (Expo), Kotlin (Jetpack Compose), Vite, Tailwind CSS, deck.gl, Google Maps Platform, Recharts / Nivo / Chart.js, HTMX

Backend & Data: Node.js, Fastify, Express, FastAPI, Rust (tokio), REST & WebSocket APIs, PostgreSQL / PostGIS, DynamoDB, SQLite, Supabase, Kysely, Zod

Cloud & DevOps: AWS (EC2, Lambda, DynamoDB, S3, IAM, Amplify, SES, Route 53, CloudWatch, Cognito, API Gateway, SSM, ECR, IoT Greengrass), Docker Compose, OpenTofu / Terraform, GitHub Actions (OIDC), Linux, Caddy, nginx, Cloudflare, systemd

Messaging & IoT: MQTT (Mosquitto, rumqttd), WebSockets, Bluetooth LE, Raspberry Pi, ESP32, pi-gen

Testing & Security: Vitest, Testing Library, Rust integration tests, CI/CD, JWT / session verification, CSP and security headers, dependency auditing

AI & Data: AI coding agents (Claude Code), LangChain, multi-agent orchestration, LLM APIs (OpenRouter, Gemini), local LLMs, RAG, Stable Diffusion, LightGBM, XGBoost, OpenVINO, Pandas

Also: Multi-tenant auth (Clerk, NextAuth v5, SSO), CAP / IPAWS / WMO alert standards, GeoJSON, technical writing, client engagement, mentoring

EXPERIENCE

PeopleSense.AI (PeopleSense Digital India)

Chief Product Officer

India, remote

Jan 2026 – Present

Rust · TypeScript (Fastify) · PostgreSQL / PostGIS · Docker Compose · OpenTofu · GitHub Actions · AWS · MQTT · React + deck.gl

- Lead product and engineering for **PeopleSense HeatMap** (formerly PeopleSense Places, since 2024), a live map of sensor occupancy and earthquake and public-safety alerts used at BITSync 2024, a 49ers ACE event train, OneLA and the Great ShakeOut. Own a **100K+ line** codebase (**330+ commits**) and a 17-milestone roadmap inside a hard **40–60 USD/month** budget.

PLATFORM AND SECURITY

- Replaced direct browser access to DynamoDB with an authenticated **TypeScript API** (Fastify, Kysely, Zod) on **Postgres/PostGIS**, removing AWS keys from the public bundle; a CI check fails the build if one returns.
- Delivered a portable single-server platform (**Docker Compose, Caddy, Postgres**) on one arm64 EC2 instance, provisioned with **OpenTofu** and deployed by **GitHub Actions** over OIDC with no stored cloud secrets; rejected Fargate/ALB/RDS (about 330 USD/month).
- Added an admin status page with rule-based email and Telegram alerting (stale feeds, silent earthquake stream, disk, failed backup), plus security headers, a report-only CSP and dependency-audit gating.

REAL-TIME ALERTING

- Moved alert ingestion into one worker: **36 MeteoAlarm feeds**, 5 national CAP feeds, **FEMA IPAWS** (signed SNS endpoint plus OpenFEMA reconciliation) and India's **NDMA SACHET**, with idempotent inserts, backoff and a one-year S3 archive.
- Built the multi-tenant **MQTT** alert broker (Mosquitto, ACL-scoped topics) so each agency receives only its own coverage area.

EARTHQUAKE EARLY WARNING

- Built a **Rust** service for **USGS ShakeAlert**: persistent QoS 1 MQTT over verified TLS, one never-deleted record per earthquake keyed by USGS core id, and a fast path that pushes each message beside the database write with a per-version latency record.
- Wrote eew-replay and a CI suite that replays 11 recorded USGS earthquakes through Mosquitto into Postgres.

HOW IT SHIPS

- Shipped **50 pull requests in under four weeks**, each with tests and CI gates, working with AI coding agents under a written testing and review standard.

INDIA DELIVERY, PARTNERS AND PEOPLE

- Ran India delivery for **DMRC**, Mumbai Metro and NCRTC (**5 Delhi and 2 Mumbai** site trips); presented the calibration pipeline to DMRC's GM Telecom, CISF Chief Security Commissioner and Director of Operations (POC and MoU approvals); delivered India's **first permanent PeopleSense micro-cell** at Rajiv Chowk (**100% uptime** after install).
- Built that site's calibration pipeline (a daily Lambda computing EWMA-blended profiles from fare-gate data) and ML on the same transit data (LightGBM, XGBoost, OpenVINO; **27% better inference accuracy**).
- Drafted and finalised the **FEMA IPAWS-OPEN MOA**; wrote the WIS 2.0 whitepaper for UNDP EW4All Pillar 4 and CAP-XML research for NDMA's Sachet app; work with IAEM, OASIS Open, UNDP, USGS and EMTC on emergency relief and occupancy; invited to the 2026 CAP Implementation Workshop, UK (hosted by the Environment Agency, Alert-Hub.Org and OASIS Open).
- Mentored **5 student cohorts** (FCUSD, BVT, BITS Pilani PS1, Sacramento State) on Python, Raspberry Pi, MQTT, AWS and AI coding.

Glocol Networks (Glocol Inc.)

California, USA, remote

Software Engineer (Practice School Intern, Aug 2023 – Jul 2024)

Jul 2024 – Present

Next.js · React · React Native · AWS (Lambda, DynamoDB, EC2, Amplify, Greengrass) · Python · MQTT · Raspberry Pi

- Took **PeopleSense Monitor** from a solo practice-school prototype to a multi-tenant production dashboard for **11+ client organisations** (ACE Rails, CCJPA, USGS, Sac State): live occupancy for 5+ rail corridors, a digital-twin station view, admin roles and SES notifications.
- Owned a multi-account AWS estate (**35+ Lambda functions, 50+ DynamoDB schemas**, EC2, Amplify CI/CD, Route 53, IAM); a billing audit cut unnecessary Lambda and DynamoDB spend.
- Rebuilt sensor auto-deployment for the **Greengrass V1 to V2** migration (pi-gen OS images, hotspot web-form onboarding, LED status), removing manual SSH from every install; deployed and maintained **100+ IoT sensors** across train cars, schools and Delhi Metro.
- Built the company's first mobile app, **PeopleSense-BLE-Jig** (React Native), for Bluetooth Classic and BLE scanning with RSSI history and geolocated PDF export; also wrote a native Kotlin BLE scanner with AI help.
- Wrote technical sections for **4 RFPs** (DFW Airport, AMTRAK, Sourcewell, CCTA), all submitted.

Nandi Pipes Pvt Ltd

Nandyal, India

Summer Intern

May 2021 – Jul 2021

- Researched lead-free thermal-resistance (stabiliser) additives for PVC pipes; mapped plant workflows and cut identified process inefficiencies by **15%**.

SELECTED PROJECTS

Intel hackathons – team awards more than once; Lift-Off winner, bike-rack detection, led a team of 4

Aug 2024

Intel Geti · Intel Tiber Cloud · OpenVINO · OpenCV · React

- Real-time bike-rack detection with automated labelling and retraining and a React dashboard; the vision stack later fed people counts into PeopleSense.

Agentic Trading Platform – multi-agent strategy research & execution

2026

Python · FastAPI + HTMX · SQLite (WAL) · Zerodha Kite API · systemd

- A 9K-line Python platform: an orchestrator drives 5 agents over about 120 stocks with 10 pluggable strategies, a backtest engine, 4 isolated paper and live modes with loss limits and a systemd-scheduled trading day.

Emergency Management Office AI – alert-to-broadcast agent pipeline

2026

LangChain · FastAPI · DynamoDB · Gemini / OpenRouter

- A six-agent chain with 8 custom tools that turns a CAP or USGS alert into a situation report, maps, news copy and an avatar broadcast script; a live daemon normalises NDMA Sachet CAP RSS and USGS GeoJSON into one event schema.

AeonDaily – AI-assisted reading & vocabulary Android app

2026

React Native (Expo) · Node / Express · DynamoDB · Gemini

- A 2,000+ essay corpus with instant definitions, flashcards and daily Gemini-written push notifications; shipped with EAS builds.

Local AI lab – self-hosted LLMs, RAG and Stable Diffusion on Linux

ongoing

Linux · local LLMs · RAG (embeddings, vector search) · Stable Diffusion

- Sets up local LLMs, RAG and Stable Diffusion models and works across operating systems; built with AI help, with a working grasp of how they work.

EDUCATION

Birla Institute of Technology & Science (BITS), Pilani

Pilani, India

M.Sc. (Hons.) Chemistry & B.E. (Hons.) Chemical Engineering, Dual Degree

2019 – 2024

Certificates: Automate the Boring Stuff with Python; Four Google Cloud Infrastructure courses