

MAHARDI SETYOSO PRATOMO

Geospatial Solution Engineer

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PROFESSIONAL SUMMARY

Geospatial solution engineer with 8+ years turning ambiguous requirements into working solutions and carrying them through adoption. Drove GrabMaps platform adoption from 20–40% at launch to a stable 85–90% over four years, the full arc of a technical product meeting real users. Designs and builds: four internal solutions specified and delivered with Engineering and Product, two of them built hands-on, including a live self-service tool still in production. Technical foundation in SQL, Python, PostgreSQL/PostGIS, spatial SQL, and cloud architecture (GCP, Terraform, Docker). Pre-sales roots in geospatial hardware and imagery, qualifying requirements and building configuration proposals with principals and channel partners.

PROFESSIONAL EXPERIENCE

Grab Holdings | Jakarta, Indonesia | Mar 2018 – Jun 2026

Senior Geospatial Product Operations | Apr 2023 – Jun 2026

- Designed an automated outage-alert system for the deployed IoT fleet, defining detection logic and escalation rules, then drove the build with Engineering and Product, replacing manual device-status checks with triggered notifications routed to the responsible team.
- Designed and specified an automated quality-control and validation layer for regional operations, integrated into Slack for SEA-wide teams: invalid task entries were caught at submission rather than surfacing downstream as corrupted AHT and SLA figures.
- Root-caused recurring metric distortion to invalid upstream data entry rather than to the formula, standardized the calculation logic to per-ticket, and enforced it at the point of entry.
- Translated stakeholder needs into actionable roadmaps, optimizing the end-to-end process rather than delivering scope in isolation; defined tool-integration scope by separating critical-path from non-critical components.
- Directed data-informed site selection using SQL and Python on GMV, city-level demand, and POI suitability, replacing blanket rollout with demand-weighted capital allocation.
- Led a team of up to 10 specialists across five concurrent programs in three countries, owning resource planning, delivery accountability, and USD 200K+ in program budget across vendors, logistics, and deployment.
- Ran regional enablement: training sessions across country teams, plus 30+ community driver-partners trained on deployed hardware.

Geospatial Product Operations | Mar 2018 – Apr 2023

- Coordinated GrabMaps product launches (Special POI, routing, indoor navigation, location campaigns), capturing customer and cross-functional issues, root-causing them, and proposing market-fit redesigns to Product and Engineering.
- Designed an automated polygon-generation workflow classifying millions of POI records by business type (commercial, education, residential) into targetable service areas, enabling Marketing to run geographically targeted promotions at a scale that was manually impossible.
- Managed launch sequencing during Grab's migration off third-party map services, prioritizing rollout order to contain adoption risk.
- Recovered missing geohash schemas causing revenue gaps in newly extended service areas using SQL and Python, then organized unstructured geofence and service-boundary data company-wide.
- Analyzed routing and ETA by combining OpenStreetMap features with internal data-lake SQL to diagnose defects in high-density venues.

Key results

- GrabMaps adoption: 20–40% at 2022 launch → stable 85–90% by 2026.
- 200,000+ Special POI entrances and venues plus 20 indoor navigation sites; 90–95% rollout success, 85–90% booking-point accuracy.
- Ticket throughput 12 → 25–30 resolved per day; ETA accuracy improved 70–80% in airport, mall, and station zones.
- Restructured Grab geoservices to comply with Badan Informasi Geospasial boundaries, aligning revenue metrics to actual administrative areas.

Datascip | Business Executive, Geospatial & Surveying | Nov 2016 – Nov 2017

- Ran technical pre-sales for surveying and geospatial hardware (GNSS, total stations, FARO laser scanning, digital theodolite): qualified customer requirements, matched them to appropriate configurations, and built tailored solution proposals jointly with principals and channel partners.
- Closed a 10-unit theodolite deal (IDR 70M) and coordinated integrated surveying solutions across multiple sectors.

KLHK (Ministry of Environment and Forestry) | Geospatial Analyst | Jan 2016 – Nov 2016

- Reconciled forestry spatial data from provincial offices across all 27 Indonesian provinces into a single consistent national dataset for the PIPPIB moratorium map, resolving conflicting schemas, boundary versions, and attribute conventions across independently maintained sources.
- Output adopted as a cross-ministry land-use governance reference, a national-scale spatial data product consumed well beyond the producing agency.

Earthline | GIS Assistant & Business Development | Aug 2014 – Nov 2015

- Digitized oil-palm plantation boundaries; estimated mapping areas of interest and converted them into commercial quotes for satellite imagery and mapping services. Supported B2B quotes valued IDR 300M–1B for clients including Sinarmas, Wilmar, and Pertamina.

SOLUTION DESIGN ARTIFACTS

Maritime Spill Detection and Investigation: Solution Design

Independent solution design for a national maritime authority scenario. Covered the full brief: component identification with selection rationale, end-to-end architecture, detection and investigation workflows, executive dashboard and investigation WebGIS wireframes, deployment model across three data-sensitivity tiers, data volume and retention sizing, licensing and cost structure, stated assumptions, and nine rejected alternatives with the reasoning behind each. Declined to quote pricing outside the design remit and said so explicitly.

NYC Taxi Supply-Demand Gap Analysis | [Live dashboard](#) | [GitHub repo](#)

Designed and deployed a seven-component integrated system (object storage, Dataproc/PySpark, BigQuery, dbt, PostGIS, Kestra/Docker orchestration, Streamlit front end), provisioned as infrastructure-as-code with Terraform and service-account-scoped IAM. Analyzed 35M+ validated trips across 185 zones to quantify \$81.6M in unmet demand. Falsified the road-infrastructure hypothesis using 72,005 OpenStreetMap segments and PostGIS spatial joins, proving dispatch rather than physical access was the bottleneck. Documented 56 architecture decisions with explicit trade-offs.

Geohash Schema Automation Extractor | [Live app](#)

Built a production Python and Streamlit tool, still live, letting non-geospatial teams extract geohash schemas from map polygons without GIS software. Cut a two-day manual workflow to 3-5 minutes. Presented as a top-5 finalist at an internal Product Ops hackathon.

SKILLS

Solution design & delivery: requirements elicitation, solution design, workflow automation design, system integration design, trade-off analysis, technical documentation, technical presentation, enablement and training

Technical: SQL, spatial SQL, Python, PrestoSQL/Trino, Hive data lake, BigQuery, PostgreSQL/PostGIS, GeoPandas, H3, Geohash, OpenStreetMap (POI, routing, geofence), QGIS, ArcGIS (map production), Streamlit, Looker Studio, Apache Superset, Google Apps Script, Docker, Terraform, Git, dbt, PySpark, Kestra

Stakeholder & commercial: cross-functional collaboration, stakeholder management, vendor management, budget ownership (USD 200K+), B2B technical pre-sales, proposal writing

Languages: Bahasa Indonesia (native), English (professional working)

EDUCATION

Universitas Gadjah Mada (UGM), B.Sc. Geographic Information Science (Minor: Statistics and Programming)

CERTIFICATIONS

- Big Data Analytics using PySpark, Algoritma Data Science School, Feb 2025
- Certified Associate in Project Management (CAPM), Project Management Institute, May 2023
- Data Science Academy Full Stack, Algoritma Data Science School, Oct 2020