

# Orendo Rusfian Raharjo

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I specialize in geospatial analytics, fiber network planning, and data-driven infrastructure development, delivering solutions that translate complex spatial data into actionable deployment decisions. My experience spans FTTH/FWA network planning, OSP design validation, fiber route analysis, homepass assessment across 109+ districts/cities, and workflow automation, with a focus on data quality, spatial accuracy, and deployment efficiency. I leverage Python, GIS, and network intelligence to support market analysis, infrastructure optimization, and scalable data operations. I am particularly focused on emerging areas such as broadband coverage analytics, AI-driven geospatial intelligence, and telecom infrastructure digitalization, seeking to contribute to initiatives that integrate fiber network data, automation, and geospatial insight to drive measurable deployment impact.

## Work Experience

### PT. Tower Bersama Infrastructure || Fulltime

2023 – Present

#### Product Management and Partnership

- AI related product research and development
- Align partner capabilities with product strategy and growth objectives
- Analyze user behaviour, metrics, and feedback to drive product improvements
- Translate market needs into clear product requirements and specifications
- Develop product catalogue
- Lead product roadmap for FTTH geospatial intelligence platform
- Developed product specifications for an operational platform supporting fiber deployment workflow automation
- Defined product catalog for FTTH and FWA broadband planning services aligned with telecom operator requirements and last-mile connectivity business objectives
- Aligned partner capabilities in OSP design, field survey automation, and AI-powered homepass classification with product strategy and revenue growth objectives

#### GIS Analytics Section Head

- Define and execute the geospatial analytics roadmap aligned with business goals (FTTH, Network expansion, Enterprise, Market intelligence, etc.)
- Act as key advisor on location intelligence strategy
- Translate data into socioeconomic insights (market scoring, clustering, demand prediction, network optimization)
- Forecasting expansion areas using multi-layer geospatial analysis
- Led nationwide FTTH network opportunity planning and feasibility assessment for million homepasses locations across 109 districts/cities, covering Java, Sumatra, Sulawesi, Kalimantan, Bali, and Nusa Tenggara
- Reviewed and validated fiber route designs and OSP layouts for multiple ISP ensuring field deployment accuracy
- Led B2B and brownfield network assessment projects including enterprise POI targeting, due diligence pipeline qualification, and inter-operator competitive analysis
- Guided data quality standards and pipeline validation criteria for fiber OSP datasets, homepass digitization, and network topology accuracy across all project deliverables
- Directed multi layer geospatial feasibility analysis integrating building footprints, road networks, administrative boundaries, and demographic data for OSP design decision-making
- Oversee development of internal tools, ensure automation reduces manual processes
- Define standards for data structure, and pipeline
- Build and mentor GIS analytics team
- Define and drive performance metrics aligned with business objectives
- Work with network, commercial, and operations teams to align insights with execution
- Translate technical outputs into business narratives
- Integrate AI ecosystem

#### Data Analytics and Market Research Engineer

- Develop scripts using Python (GeoPandas, Shapely, Folium, Pydeck, etc.)
- Automate repetitive GIS workflows
- Support internal tools and dashboards
- Create maps and dashboards for business insights
- Developed Python-based FTTH demand forecasting and homepass analysis pipeline, processing to prioritize fiber deployment areas
- Analyzed broadband operator coverage data to identify network gaps and support FTTH/FWA expansion strategy
- Supported FTTH feasibility assessment by integrating building footprints, road network graphs, demographic scoring, and market share
- Present findings in clear, actionable formats
- Support decision-making with data storytelling
- Clean, validate, and integrate spatial datasets (POI, network, demographic)
- Built automated OSP devices generation workflows
- Validated and integrated spatial network datasets for nationwide fiber rollout, supporting accurate material estimation and Bill of Quantities (BoQ) for planning

## PT. Bhumi Varta Technology || Fulltime

2021 – 2023

### GIS Engineer (Point of Interest Lead)

- Maintained millions of Points of Interest (POI) data updates and integration.
- Established standardized guidelines for POI data to ensure consistency, enabling the team to produce accurate attribute and spatial data.
- Planned and coordinated the operational activities of the POI team, optimizing them based on business impact.
- Managed, and maintained team workflows and the POI data update pipeline to optimize, transform, and structure data for efficient and accurate data consumption.
- Researched, evaluated methods, and implemented automation across all relevant aspects to enhance data production efficiency and minimize human errors.
- Created comprehensive reports to monitor progress, obstacles, and evaluation for further action.
- Assisted all types of spatial data processing automation flow development based on Python.

**Tools:** Python Programming Language, SQL, QGIS, Microsoft Workspace, Google Data Studio, AWS Cloud

### GIS Technician (Point of Interest Sub-Team Coordinator)

- Conducted data quality control for POI data from vendors and internal sources in projects.
- Implemented a new approach to enhance the data process flow.
- Researched and developed a method for custom data processing.
- Created an automation flow for efficient data processing.
- Assisted the GIS Engineer in building the data structure.

**Tools:** Python Programming Language, SQL, QGIS, Google Workspace.

## PT. Geomatika Rekayasa Survey || Fulltime

2019 – 2020

### Mapper and Quality Controller

- Coordinate with vendor for spatial data quality control and evaluation
- Digitized road and plantation polygons based on drone images.
- Imagery data processing.
- Generate output map based on client request.

**Tools:** ArcMap, ENVI, Microsoft Office

## Freelance

2017 – 2021

- Urban Slum Residents Surveying. Surveyor  
Qualitative survey about resident personal data and their housing preferences.
- Public's Perspective on Transit Oriented Development in DKI Jakarta. Surveyor  
Collecting data about people's awareness, and their opinion on Transit Oriented Development.
- Oil Palm Plantation Mapping of West Sumatera. Mapper  
Identify and count oil palms in a certain area and mark them as point features.
- Grab Partner Store Product Survey in South Jakarta. Surveyor  
Listing every product that Grab's partner store sells.
- Build Up Area Mapping of West Java. Mapper  
Identify and digitize build-up area.
- Street View Surveying in Depok, West Java. Surveyor  
Recorded actual footage of the street for web map street view.
- The Sustainability of The Bantul Regency Argo-Tourism Area. Analyst  
Assess which area is suitable to further Bantul's Argo-Tourism.
- Land Use Mapping of Humbang Hasundutan, North Sumatra. Mapper  
Identify every natural appearance using ESRI Base Map satellite imagery.
- Republic of Indonesia's Spatial Planning and Territory Constitution Reformat. Data QC

## Education

### University of Indonesia

2016 - 2020

Faculty of Mathematics and Natural Science

Major in Geography [151 Credits]

**Graduating paper:** Effect of ENSO MJO IOD on Shoreline Changes in Badung Regency and Denpasar City, Bali

### State Senior Highschool 3 Semarang

2013 - 2016

Major in Natural Science with a Minor in Geography

## Skills

- Spatial software (QGIS, ArcGIS).
- FTTH/FWA Network Planning. OSP Design & Validation.
- Geospatial Science (Spatial statistics, Natural language processing, etc)
- Remote sensing (ENVI, Basic knowledge of Google Earth Engine).
- Data Mining (Web scrapping, Exploratory Data Analytics)
- Data Visualization
- Data Engineering
- Spatial database management.
- RDBMS (Relational Database Management, Structured Query Language, Extract Transform Load)
- Statistics
- Microsoft Office.
- MLOps

- IT Support.
- Agentic AI systems development
- Software Developments

## **Certificate**

- Udemy - Complete Python Developer in 2022.
- Udemy - SQL and PostgreSQL: The Complete Developer's Guide.
- University of Michigan | Coursera - Database Design and Basic SQL in PostgreSQL.
- University of Michigan | Coursera - Intermediate PostgreSQL.

## **Awards**

- Winner QCC 2024 | TBIG Impact 2024 | Tower Bersama Group
- Diamond Medalist | TKMPN 2024 | Wahana Kandali Mutu
- Winner QCC 2024 | TBIG Impact 2025 | Tower Bersama Group
- Diamond Medalist | TKMPN 2025 | Wahana Kandali Mutu
- Gold Medalist | ICQ 2025 | Union of Japanese Scientist and Engineer
- The Best Digital Achievement \*5 | Indonesia Digital Inovation and Achievement | Business Asia
- Digital Initiatives | ASIAN Telcom Awards | Asian Telcom
- AI Initiative of The Year | ASIAN Telcom Awards | Asian Telcom