

# JONATHAN HARPIN MANURUNG

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## EDUCATION

### University of Pennsylvania

Philadelphia, PA

*Master of Urban Spatial Analytics. GPA: 3.57/4.00*

May 2024

- Awards: Indonesia Endowment Fund for Education (LPDP) Scholarship
- Relevant Coursework: Geospatial Data Science in Python, Statistical and Data Mining Methods for Urban Data Analysis, Public Policy Analytics, Land Use and Environmental Modeling, Geospatial Cloud Computing & Visualization, Property Development, Progressive Development

### Bandung Institute of Technology

Bandung, Indonesia

*Bachelor of Geodesy and Geomatics Engineering. GPA: 3.23/4.00*

October 2016

- Awards: Tanoto Foundation Scholarship, Dean's Award of the Academic Achievement
- Final Project: Land Subsidence Monitoring in Underground Mining PT Antam Tbk UBPE Pongkor, Jawa Barat, to identify locations affected due to underground mining activity and assist in decision-making to mitigate the risk
- Organization: Geodesy and Geomatics Engineering Student Association, Tanoto Foundation Scholar Association

## RELEVANT ACADEMIC PROJECTS

### University of Pennsylvania

Philadelphia, PA

*MUSA Practicum/Capstone Project: A Data Framework to Correct Underperforming Transit Lines for Charlotte Area Transit System*

May 2024

- Analyzed Automated Passenger Counter (APC) data, census demographics, and spatial accessibility metrics using Ordinary Least Square (OLS) Regression Model and Random Forest Model to identify factors contributing to underperforming bus stops and routes.
- Designed and deployed a predictive ridership model within an interactive dashboard, enabling scenario testing and stop-level performance forecasting to guide network optimization strategies

*Urban Development Forecast in Atlanta Metropolitan Statistical Area Project*

May 2024

- Analyzed Atlanta Metropolitan Statistical Area (MSA) land cover data using predictors such as distance to nearest developed area, distance to highway, and population data, to train a development predictive model
- Projected development area in 10 years, with additional scenario analysis indicating new highway construction

*Estimating a Flood Inundation Probability Map*

April 2024

- Developed a flood inundation probability model by integrating DEM-derived proximity to streams and hydrologic features, elevation data, and land cover classifications from city of Calgary data using ArcGIS Pro and RStudio.
- Built predictive datasets through Euclidean distance analysis, elevation modeling, and NLCD land cover reclassification, achieving 92.5% model accuracy (AUC) to predict a flood inundation in Denver, Colorado

*Los Angeles Fire Risk Prediction Project*

December 2023

- Built a wildfire risk prediction model for Los Angeles using fire perimeter, vegetation, heat island, and hydrology data with regression and spatial cross-validation.
- Generated insights for insurance pricing and real estate platforms, identifying high-risk zones to guide premium setting and property decisions.

## RECENT PROFESSIONAL EXPERIENCE

### Superintending Company of Indonesia (SUCOFINDO)

Jakarta, Indonesia

*Operations Manager*

May 2022 – August 2025

- Arranged a technical and financial documents for National Project of accelerating the implementation of Geospatial Information in Indonesia, a Public-Private Partnership Project (PPP) between the Government of Indonesia and State-Owned Enterprise.
- Managed and accelerated the execution of Indonesia's national base map project across 30,000+ km<sup>2</sup>. Oversaw the full project lifecycle

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*Sub-Branch/Unit Manager*

Ambon, Indonesia  
August 2020 – May 2022

- Led a sub-branch office to surpass corporate targets for two consecutive years while in leadership role. From revenue of \$120,000 in 2020 to \$450,000 in 2022.
- Coordinated operation, customer relations, human capital, and administration for the sub-branch office, leading a team of 28 staff with operation area across two provinces.

*Operation Coordinator*

Makassar, Indonesia  
January 2019 – August 2020

- Led and delivered a Green Port consultancy project for two major Indonesian ports, achieving the implementation of energy efficiency, occupational safety and health, and environmental-friendly concept, resulting in \$50,000 in project revenue

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**SKILLS & INTERESTS**

- Technical: Spatial Data Analytics, Geospatial Machine Learning, Geographic Information System (GIS), Remote Sensing, Cloud Computing, Spatial Data Acquisition and Processing
- Programming: R, Python, SQL
- Language: Bahasa Indonesia (Native), English (Fluent)
- Certification: CITI Program Course Human Research, Certified Occupational Health and Safety Assessment (SMK3) Lead Auditor, Certified ISO 9001:2015 (Quality Management System) IRCA Registered Lead Auditor