

JUAN IGNACIO FULPONI

Senior Data Scientist | Spatial Analytics & Transport Economics

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ABOUT ME

Senior Data Scientist and Economist with 7+ years of experience turning geospatial and mobility data into policy-relevant insights. I have worked with the **World Bank**, the **Inter-American Development Bank**, and private consultancies across **Latin America, Europe, and Africa**, leading projects that range from origin-destination matrix estimation to infrastructure impact evaluation.

My work sits at the intersection of **spatial econometrics, machine learning, and cloud computing**. I design end-to-end pipelines—from raw GPS and mobile-phone traces to actionable indicators—using Python, R, Spark, and cloud platforms (AWS, GCP).

WORK EXPERIENCE

REDAS Engineering — Transportation Economist & Data Scientist

Milan, Italy | Dec 2024 – Apr 2025, Dec 2025 – Present

- Designed feasibility studies and ex-ante impact evaluations for major road and rail infrastructure projects in Italy.
- Integrated geospatial econometric methods into traditional transport planning workflows, improving cost-benefit accuracy.
- Coordinated with clients and public agencies to align technical deliverables with regulatory requirements.

ALEPH SRL — Transportation Consultant

Florence, Italy | Mar 2024 – Dec 2024

- Assessed macro- and micro-level impacts of road and high-speed rail investments using data-driven models.
- Developed demand forecasting and network simulation tools for regional transportation planning.
- Authored technical reports that informed public investment decisions at the regional level.

World Bank Group — Transportation Planning Consultant

Remote | Nov 2022 – Dec 2025

- Estimated origin-destination matrices from mobile-phone data for Buenos Aires and Bogota, supporting metropolitan transport planning.
- Quantified congestion costs in Lima by fusing Waze, GTFS, and GPS data into a unified geospatial framework.
- Collaborated with government agencies in Latin America and Sub-Saharan Africa to translate analytical products into transport policy.

World Bank Group — Development Data Partnership

Remote | Mar 2022 – Jun 2023

- Engineered large-scale spatial data pipelines in Apache Spark and Sedona for global development use cases.
- Deployed production-ready analytical workflows in R and Python on AWS and GCP, serving multiple partner organizations.
- Contributed to the Partnership's open-source toolkit for geospatial data processing.

Inter-American Development Bank — External Consultant

Remote | Apr 2022 – Jun 2023

- Processed GPS and mobile-phone data (Veraset, Meta) to generate origin-destination matrices and modal-split estimates across 17 Latin American cities.
- Applied spatial econometric and machine-learning models to characterize urban mobility patterns at scale.
- Built reproducible R/Python pipelines for automated visualization and reporting.

Uber — External Consultant

Buenos Aires, Argentina | 2021 – 2022

- Evaluated the causal impact of ride-hailing on urban congestion using econometric and machine-learning models in R.

INDEC (National Statistics Institute) — Product Owner

Argentina | 2021 – 2022

- Led the modernization of national statistics production workflows, migrating legacy processes to SQL, R, and C#.

City of Buenos Aires — Transportation Economist

Argentina | 2017 – 2019

- Conducted feasibility studies, demand analysis, and cost-benefit evaluations for urban transport infrastructure projects.

EDUCATION

MSc in Transport Economics, Planning & Operations

2023

University of Pablo de Olavide, Seville, Spain

BA in Economics (Honors)

University of Buenos Aires

GPA: 8/10 | Thesis on congestion economics (10/10)

TECHNICAL SKILLS

Languages & Frameworks: Python (GeoPandas, PyTorch, Scikit-learn), R (Tidymodels, INLA, sf), SQL (PostGIS, BigQuery), C#

Big Data & Cloud: Apache Spark, Apache Sedona, Docker, Kubernetes, AWS, Google Cloud, Databricks

Spatial Analysis: Spatial Econometrics, GeoAI, OD Matrix Estimation, Network Analysis

Visualization: Shiny, Power BI, QGIS, Leaflet, CARTO, Kepler.gl, Blender

Methods: Causal Inference, Machine Learning, Bayesian Modeling (INLA), Spatial Statistics

Languages: English (C2) | Spanish (Native) | Italian (Intermediate)

SELECTED PUBLICATIONS

- **Fulponi, J.I.**, Tartaglia, M., & Nourbakhsh, S. (2025, in press). Unpacking the Impact of High-Speed Rail on the Short-Term Rental Market: A Machine Learning Approach Using Airbnb Data in Italy. *Proc. 5th Intl. Symposium on HSR Socioeconomic Impacts, UIC*.
- Stokenberga, A., Ivarsson Molina, L. & **Fulponi, J. I.** (2025). A Net Cure or Curse? Tracking the Impact of E-Commerce on Urban Freight Transport Intensity in Bogota and Buenos Aires. *World Bank Policy Research WP 10485*.
- **Fulponi, J.I.**, Ivarsson, E., Gonzalez, K., & Stokenberga, A. (2024). Leveraging Big Data to Understand Women's Mobility in Buenos Aires. *World Bank Policy Research WP 10662*.
- **Fulponi, J.I.**, Ivarsson, E., & Stokenberga, A. (2023). The COVID-19 Mark on Urban Mobility: A Tale of Two Cities' Journey to Recovery. *World Bank Policy Research WP 10484*.
- Abad, J., Molerés, C., **Fulponi, J. I.**, et al. (2022). Urban freight distribution in Buenos Aires: public policy innovation proposals. *IDB Publication*.
- **Fulponi, J.I.** & Molerés, C.J. (2022). Methodology for mobility analysis with Facebook data: OD matrix generation. *IDB & CAF*.
- **Fulponi, J.I.** (2022). Traffic congestion in Buenos Aires: diagnosis and public policy recommendations. *Transportation Research Procedia, AIIT Conference, Rome*.
- **Fulponi, J.I.** (2021). Socioeconomic costs of road accidents in Buenos Aires. *XVIII Argentine Roads Congress, Mendoza*.