

Juan Ignacio Fulponi

Senior Data Scientist | Spatial Analytics & Transport Economics

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About Me

Senior Data Scientist and Economist specializing in **spatial analytics, geospatial AI, and transport economics**. With 7+ years of international experience (World Bank, IDB, private consulting), I build **scalable cloud-native pipelines, predictive models, and spatial econometrics frameworks** to transform location data into actionable insights.

Proficient in **Python, R, SQL, Spark, Sedona, and cloud platforms (AWS, GCP)**, with a strong background in **machine learning, spatial econometrics, and mobility data science**. Passionate about bridging **advanced data science with real-world geospatial problems**, from **urban mobility and logistics** to **infrastructure impact evaluation**.

Work Experience

REDAS Engineering — *Transportation Economist & Data Scientist*

Milan, Italy | Dec 2024 – Apr 2025

- Designed **feasibility and impact evaluations** for major transport infrastructure projects.
- Integrated **data science and geospatial econometrics** into transport economics workflows.
- Supported **strategic project development and client engagement**.

ALEPH SRL — *Transportation Consultant*

Florence, Italy | Mar 2024 – Dec 2024

- Evaluated **macro and micro impacts** of road and HSR projects.
- Applied **data-driven models** in transportation planning and engineering.
- Delivered **evidence-based insights** for feasibility and infrastructure policy.

World Bank Group — *Transportation Planning Consultant*

Remote | Nov 2022 – Present

- Built **OD matrices from mobile data** (Buenos Aires, Bogotá) and assessed congestion costs (Lima).
- Delivered **geospatial data products** integrating Waze, GTFS, and GPS.
- Coordinated with **governments in Latin America and Africa**, ensuring real-world policy impact.

World Bank Group — *Development Data Partnership*

Remote | Mar 2022 – Jun 2023

- Developed **spatial data pipelines in Spark + Sedona** for global development use cases.
- Built **production-ready analytical workflows** in R/Python deployed on **AWS & GCP**.
- Provided **scalable geospatial solutions** for partner organizations.

Inter-American Development Bank — *External Consultant*

Remote | Apr 2022 – Jun 2023

- Processed **GPS + mobile data** (Veraset, Facebook) to generate OD matrices and modal splits.
- Applied **spatial econometrics and ML models** across 17 Latin American cities.
- Created **reproducible R/Python pipelines** for visualization and reporting.

Uber — *External Consultant*

Buenos Aires, Argentina | 2021 – 2022

- Evaluated Uber's impact on congestion using **econometric ML models in R**.

INDEC (Statistics Institute) — *Product Owner*

Argentina | 2021 – 2022

- Modernized national statistics workflows using **SQL, R, and C#**.

City of Buenos Aires — *Transportation Economist*

Argentina | 2017 – 2019

- Led feasibility studies and **urban transport policy analysis**.
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Education

MSc in Transport Economics, Planning & Operations *University of Pablo de Olavide*
– *Seville, Spain | 2023*

BA in Economics (Honors) *University of Buenos Aires*

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

Spatial & Cloud Data Science

Python (GeoPandas, PyTorch, Scikit-learn), R (Tidymodels, INLA, sf), SQL (PostGIS, Big-Query), Spark, Apache Sedona, Docker, Kubernetes, AWS, Google Cloud, Databricks.

Spatial Analysis & Visualization

Spatial Econometrics, Machine Learning, GeoAI, OD Matrix Estimation, Shiny, Power BI, QGIS, Leaflet, CARTO, Blender.

Languages

- English: C2 (Proficient)
 - Spanish: Native
 - Italian: Intermediate
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Selected Publications

- 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 Bogotá and Buenos Aires \(English\)](#) . Policy Research working paper no. WPS 10485; COVID-19 (Coronavirus) Washington, D.C. :World Bank Group.
- **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 Working Paper 10484*.
- **Fulponi, J.I.**, Ivarsson, E., González, K., & Stokenberga, A. (2024). [Leveraging Big Data to Understand Women's Mobility in Buenos Aires](#). *World Bank Policy Research Working Paper 10662*.
- Abad, J., Moleres, C., **Fulponi, J. I.**, Dobrusky, F., Pérez Martín, J., Sánchez, J., Fiadone, R., Suyai Mendiberri, L., Parisi, M., Spadaro, P., & Pipicello, T. (2022). *Distribución urbana de mercancías en la Ciudad Autónoma de Buenos Aires: propuestas para la innovación en políticas públicas en infraestructura, marco regulatorio y procesos logísticos*. <https://doi.org/10.18235/0004466>.
- **Fulponi, J.I.** & Moleres, C.J. (2022). [Facebook data for OD matrix estimation in Latin America](#). *IADB & CAF*.
- **Fulponi, J.I.** (2022). [Traffic congestion in Buenos Aires: diagnosis and public policy recommendations](#). *AIIT Conference, Rome*.
- **Fulponi, J.I.** (2021). *Socioeconomic costs of road accidents in Buenos Aires*. *XVIII Argentine Roads Congress, Mendoza*.
- **Fulponi, J.I.** (2016). *The Creation of the BCRA in Context*. *FACES Journal*, ISSN 0328-4050. [Link](#).
- **Fulponi, J.I.** (2016). *Impact of PRO.CRE.AR on Construction and Employment*. *Jornadas de Economía Crítica, Córdoba*. [Link](#).
- **Fulponi, J.I.** & Lupín, B. (2015). *Differential equations in the Samuelson-Solow model*. *XV IADCOM Conference, Buenos Aires*.

Interests

- Spatial Data Science & GeoAI
- Transport Infrastructure & Urban Mobility
- Open-Source Development
- Academic Research & Teaching