Mateo Neira

mateoneira.com

mateo.neira@hey.com

London, UK

Education

PhD Urban Modelling and Spatial Networks

**University College London
& the Alan Turing Institute**

2018-2024

MSc Smart Cities & Urban Analytics

University College London

Class of 2017

BSc Architecture and Urbanism

Universidad de Cuenca

Class of 2015

Honours and Awards

PhD Full Scholarship by the Alan Turing Doctoral Programme.

Skills

Statistical inference
Computational methods
Geospatial analysis
Machine learning (deep learning)
Data Science
Data Visualization

Programming

Python • pytorch, sciKit-learn, scipy
JavaScript• React, D3
SQL • PostgreSQL, PostGIS

Languages

English
Spanish

Work Experience

Foster + Partners • Associate, Data Scientist

London, UK 2022 –Current

Designed and implemented a python library for urban analytics. Developed internal APIs to evaluate masterplan designs and quantify urban form. Research and development of unsupervised learning methods for geographical knowledge discovery. Research, design, and implementation of trip generation models.

Foster + Partners • Big Data Analyst

London, UK 2017 – 2022

Implemented procedural modeling using shape grammars to efficiently create 3D city models for large scale masterplanning. Research and development of methods to quantify urban form using information-theoretic measures on networks.

Unicef • Data Consultant

London, UK 2020-2021

Analysis of human mobility data to uncover trends in the spatial and temporal evolution of COVID-19 in Ecuador to inform public policy. Applied dynamic time warping and t-SNE to study mortality time-series data to classify temporal trends and their relation to regional connectivity of the country.

SignalBox • Spatial Data Researcher

London, UK 2017

Research, development, and deployment of context aware location algorithms using machine learning and multiple sources of real-time transport information and map data.

Teaching

UCL • CASA0002 - Urban Simulation

Teaching Assistant 2021, 2022

UCL • GEOG0115 - Introduction to Social Data Science

Teaching Assistant 2020, 2021

UCL • GEOG0110 - Analytical & Numerical Methods

Teaching Assistant 2020

Publications

- Neira, Mateo, Carlos Molinero, et al. (2024). "Urban Segregation on Multilayered Transport Networks: A Random Walk Approach". In: *Scientific Reports* 14.1, p. 8370. ISSN: 2045-2322. DOI: 10.1038/s41598-024-58932-9.

- Neira, Mateo and Roberto Murcio (2022). "Graph representation learning for street networks". In: *arXiv preprint arXiv:2211.04984*.

- Law, Stephen and Mateo Neira (2019). "An unsupervised approach to geographical knowledge discovery using street level and street network images". In: *Proceedings of the 3rd ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery*, pp. 56–65.