

Babäk Firoozi Fooladi

LinkedIn | GitHub | StackOverFlow

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Data Analytics Engineer | Data Scientist

Highly analytical Geospatial Data Engineering expert and Ph.D. Candidate with extensive experience in designing, optimizing, and deploying complex data models and solutions. My expertise includes GIS analysis, spatial network modeling, extracting structured data using RAG, and performing econometric and statistical modeling. I have successfully engineered efficient data pipelines, optimized SQL queries, resolved technical debt, and improved performance through migration (Pandas to Polars) and optimisation of the data models. I am proficient in Python, R, and SQL with experience of creating data visualizations and utilizing econometric and machine learning models.

Technical Skills

Python: ●●●○○	R: ●●●●○	Julia: ●●○○○	SQL: ●●●●○
AZURE: ●●○○○	Econometric: ●●●●○	Data Viz.: ●●●●●	Spatial data: ●●●●●
PostgreSQL: ●●●○○	SQLite: ●●●○○	DuckDB: ●●●●○	MongoDB: ●●○○○
Data Analysis: ●●●●○	ArcGIS: ●●●○○	QGIS: ●●●●○	Excel: ●●●●○
RAG: ●●●●●	CAG: ●●●●○	Feature Extraction: ●●●●○	LaTeX: ●●●●●
Visio: ●●●●○	PowerBI: ●●○○○	Tableau: ●●●○○	Git: ●●●●○

Soft Skills

Team work: ●●●○○	Self-organised: ●●●○○	Project management: ●●●●○
Accounting: ●●○○○	Quality control: ●●●●○	Visual communication: ●●●●●

Experience

DATA ANALYTIC ENGINEERING <i>Self-Employed Apex-Heat – Startup</i>	Jan 2025 – Present <i>Part-time – Espoo, Finland</i>
<ul style="list-style-type: none">Resolving technical debt.Consulting the implementation of Generative AI.Migrating from Pandas to Polars to improve the efficiency and calculation time.Improving the design pattern, and writing documentations.Adjusting an improving data processing test coverage and testing methods.Optimising the SQL queries to improve response time.	
Ph.D. Candidate <i>Aalto University</i>	Sep 2020 – Dec 2024 <i>Full-time – Espoo, Finland</i>
<ul style="list-style-type: none">Processing HTML and PDF files and implementing RAG to extract structured data from the land use plan documents.Applying Econometric, ML and data analysis for quantitative research.Designed and deployed database in PostgreSQL and DuckDB data lake for research data in our team.Preparing and updating visualisations for lecture and presentation.Deploying and maintaining AZURE functions to store real estate data for research. Scrapping websites for property advertisements.Self-taught programming skills, and further obtained formal education in data science.	
Research assistant <i>Aalto University Full-time – Espoo, Finland</i>	Jun 2019 – Sep 2019
<ul style="list-style-type: none">Working on an Agent Based Modelling (ABM) solution to simulate parking pressure in Otaniemi campus area.Collaborating MIT CityLab project on agent based modelling simulation.implementing simualtions in GAMA Platform software	

Data Analytics Engineer

Qissa kaupunkisuunnitteluanalytiikka Oy – Startup

Sep 2020 – Dec 2024
Part-time – Espoo, Finland

- Designing data pipeline to gather data from REST APIs, cleaning, **Geo-coding** and storing in accordance to the specifications requested by clients
- Creating **Spatial data** dashboard for spatial network analysis back-end. The analysis used HSL, HERE and HSY APIs to gather and process the data and perform **spatial network analysis**.

Planning Assistant

WSP Finland Oy

Nov 2018 – Jun 2021
Part-time – Helsinki, Finland

- Performing **Spatial Data analysis**, Processing and storing spatial.
- Performing network analysis for pedestrian route choice forecast. The analysis was fine tuned to existing situation, and then used to forecast pedestrian flow after urban development
- Preparing analysis, graphs, maps and data **visualisations** for stakeholders, projects managers and clients.
- Providing **GIS analysis** to transport engineers, landscape designers, urban planners and architects.
- Programming and producing dynamic 3D model of the cities using ESRI CityEngine

GIS Operator

University of Tehran

Aug 2015 – May 2016
Part-time, Tehran, Iran

- Gathering, processing and preparing GIS data for urban designers to implement and test new directives for urban design in Tehran City

Chief Operating Officer

Airsa Dorsa Industries

Aug 2011 – Aug 2018
Full-time, Karaj, Iran

- Accounting, cost calculation, financial analysis, human resources and BI
- Provided in house **graphic design**, CAD and technical solutions for clients.
- Negotiating with the clients regarding their designs, pricing and production.
- Managing timelines of production, maintenance and order delivery.
- Admin duties, supervision duties, high-frequency welding, silk screen printing.

Education

Aalto University

Doctor of Philosophy in Technology, Real Estate Economics

Espoo, Finland
Sep 2020 - Present

Aalto University

MSc. (Tech.) Urban Studies and Planning in Real Estate Economics

Espoo, Finland
Sep 2018 - Jul 2020

University of Tehran

BA. Town Planning

Tehran, Iran
Sep 2011 - Jun 2015

Machine Learning | Statistical models | Econometrics

Uni-variate time-series: ●●●○○
multi-variate time-series: ●●●○○
Panel data: ●●●●○
Spatial econometrics: ●●●●○

VAR time-series: ●●●○○
OLS: ●●●●●
Generalised Method of Moments: ●●●●○
Survival/time-to-event: ●●●●●

Co-integration time-series: ●●○○○
IV-OLS: ●●●●○
Generalised linear models: ●●○○○
Additive hazard models: ●●●●●

Volunteer Work

- DataTribe collective moderator, contributor
- DataTribe collective speaker: Spatial data analysis, spatial data engineering
- Helsinki Data Week volunteer, contributor