

# Babäk Firoozi Fooladi

[LinkedIn](#) | [GitHub](#) | [StackOverFlow](#)

Location: Espoo, Uusimaa, Finland

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## Data Analytics Engineer | Data Scientist

Service-minded data scientist and Ph.D. Candidate with extensive experience in designing, optimizing, and deploying complex data models and solutions. My expertise includes Data analysis, data transformation (ETL/ELT), Large Language Models (LLM, NLP, RAG, CAG), and performing econometric, machine learning and statistical modeling. I have successfully engineered efficient data pipelines, optimized SQL queries, resolved technical debt, and improved performance through migration and optimisation of the data models. I am proficient in Python, R, and SQL with experience of creating data visualizations and deriving forecasts and inference through interpreting the results of statistical and ML models.

## Technical Skills

Python:	●●●	R:	●●●●	Julia:	●●	STATA:	●●●●
AZURE:	●●	Econometric:	●●●●	Data Viz.:	●●●●●	Spatial data:	●●●●●
PostgreSQL:	●●●	SQLite:	●●●	DuckDB:	●●●●	MongoDB:	●●
ETL/ELT:	●●●●	PowerBI:	●●	SQL:	●●●	Excel:	●●●●
RAG:	●●●●●	LLM/NLP:	●●●●	Feature Extraction:	●●●●	Vector Database:	●●●●●

## Soft Skills

Team work:	●●●	Self-organised:	●●●	Project management:	●●●●
Accounting:	●●	Quality control:	●●●●	Visual communication:	●●●●●
Quantitative research:	●●	Prompt engineering:	●●●●		

## Experience

<b>DATA ANALYTIC ENGINEERING</b> <i>Self-Employed   Apex-Heat – Startup</i>	Jan 2025 – Present <i>Part-time – Espoo, Finland</i>
<ul style="list-style-type: none"><li>Resolving <b>technical debt</b>.</li><li>Consulting the implementation of <b>Generative AI</b>.</li><li>Migrating from <b>Pandas</b> to <b>Polars</b> to improve the efficiency and calculation time.</li><li>Improving the design pattern, and <b>writing documentations</b>.</li><li>Adjusting an improving data processing test coverage and <b>testing</b> methods.</li><li><b>Optimising</b> the SQL queries to improve response time.</li></ul>	
<b>Ph.D. Candidate</b> <i>Aalto University</i>	Sep 2020 – Dec 2024 <i>Full-time – Espoo, Finland</i>
<ul style="list-style-type: none"><li>Performing <b>GIS analysis</b> to produce and maintain research datasets, and <b>geo-code</b> real estate transactions.</li><li>Processing HTML and PDF files and implementing <b>RAG</b> to extract structured data from the land use plan documents.</li><li>Applying Econometric, ML and data analysis for <b>quantitative research</b>.</li><li>Designed and deployed database in <b>PostgreSQL</b> and <b>DuckDB</b> data lake for research data in our team.</li><li>Preparing and updating <b>visualisations</b> for lecture and presentation.</li><li>Performing <b>time-to-event</b> statistical modelling for my research using parametric, semi-parametric and non-parametric models. These models include longitudinal data, repeating event, multi-state and joint models.</li><li>Experienced in preparing datasets for event history analysis.</li><li>Deploying and maintaining <b>AZURE functions</b> to store real estate data for research by scanning and scrapping websites for property advertisements.</li><li>Self-taught programming skills, and further obtained formal education in data science.</li></ul>	
<b>Research assistant</b> <i>Aalto University Full-time – Espoo, Finland</i>	Jun 2019 – Sep 2019
<ul style="list-style-type: none"><li>Working on an <b>Agent Based Modelling (ABM)</b> solution to simulate parking pressure in Otaniemi campus area.</li></ul>	

- Collaborating MIT CityLab project on agent based modelling simulation.

## Data Analytics Engineer

*Qissa kaupunkisuunnitteluanalytiikka Oy – Startup*

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

- Designing data pipeline to gather data form 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**.
- Extracted, processed and served sensus data from US, Denmark, Sweden and Finland for calculating CO<sub>2</sub> emission from commuting.

## 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.
- Setting up ArcGIS Online platroms for **maritime** planning.
- 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:	●●●	VAR time-series:	●●●	Co-integration time-series:	●●
multi-variate time-series:	●●●	OLS:	●●●●●	IV-OLS:	●●●●
Panel data:	●●●●	Generalised Method of Moments:	●●●●	Generalised linear models:	●●
Spatial econometrics:	●●●●	Survival/time-to-event:	●●●●●	Additive hazard models:	●●●●●

## Volunteer Work

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