

# Babäk Firoozi Fooladi

LinkedIn | GitHub | StackOverFlow

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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), extracting structured data using RAG, 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: ●●○○○	SQL: ●●●●○
AZURE: ●●○○○	Econometric: ●●●●○	Data Viz.: ●●●●●	Spatial data: ●●●●●
PostgreSQL: ●●●○○	SQLite: ●●●○○	DuckDB: ●●●●○	MongoDB: ●●○○○
ETL/ELT: ●●●●○	PowerBI: ●●○○○	Tableau: ●●●○○	Excel: ●●●●○
RAG: ●●●●●	Data Analysis: ●●●●○	Feature Extraction: ●●●●○	Vector Database: ●●●●●
ETL/ELT: ●●●●○	PowerBI: ●●○○○	Tableau: ●●●○○	Excel: ●●●●○

### Soft Skills

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

### 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. 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>Collaborating MIT CityLab project on agent based modelling simulation.</li></ul>	

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## 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**.
- Extracted, processed and served census data from US, Denmark, Sweden and Finland for calculating CO<sub>2</sub> emission from commuting.

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## 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

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## 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

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## 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.

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## 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

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## 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: ●●●●●

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## Volunteer Work

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