Arda Baran Baytar

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Profile

Background in statistics (BSc) and computer programming. I use SQL, Python, R and advanced Excel for data cleaning, exploratory data analysis, data transformation and reporting, and I focus on analyzing and modeling data with PostgreSQL and Power BI to produce meaningful business insights.

Education

Eskişehir Osmangazi University Eskişehir, Turkey
BSc, Statistics *2021 – 2026*

- Statistical analysis, probability theory, regression models and research methods.

Anadolu University Eskişehir, Turkey
Associate Degree, Computer Programming (Open Education) *2022 – 2025*

- Programming fundamentals, data structures and algorithm design.

Technical Skills

Programming & Data Analysis: SQL, Python (pandas, NumPy, scikit-learn, statsmodels), R

Databases & Data Processing: MySQL, PostgreSQL, SQLAlchemy, ETL, Data Cleaning and Transformation

Statistics & Machine Learning: Exploratory Data Analysis (EDA), Statistical Modeling, Regression, Classification (XGBoost, Decision Trees, KNN, Naive Bayes), Model Evaluation

Quantitative Methods: Time Series, Cointegration, Monte Carlo Simulation, MDP / Dynamic Programming, Backtesting

BI & Reporting: Power BI (DAX, Data Modeling, Dashboard Design), Excel (PivotTable, XLOOKUP/VLOOKUP, Power Query)

Software & Tools: FastAPI, REST API, Git, GitHub Actions (CI), Docker, Docker Compose, Linux, React / TypeScript (Basic), SPSS, KNIME, LaTeX

Projects

quant-lab – Quantitative Finance Research Platform *Python, MySQL, FastAPI, React*
Personal Project *2026*

- Built an end-to-end quantitative research platform that measures look-ahead leakage and survivorship bias in backtests.
- Developed a point-in-time S&P 500 universe, a backtest engine and cointegration-based pairs trading; set up CI with 100 tests.
- Once the biases were removed, momentum return fell from 2,616% to 314% and the pairs backtest from +86.8% to −11.0%.

StochOpt-MDP – Stochastic Inventory Optimization *Python, FastAPI, SimPy, React*
Personal Project *2026*

- Classic inventory rules sacrificed either cost or service level; I searched for the optimal (s, S) policy.
- Formulated the problem as an MDP, solved it with value iteration and validated it with a SimPy Monte Carlo simulation; added a web interface.
- Cost fell 32% versus Base-Stock and 7% versus static EOQ; simulation confirmed the theoretical value.

Data Mining and Model Comparison on Bank Loan Customers *Python, R*
Bachelor's Thesis *2026*

- Cleaned, explored and prepared data on 500 bank loan customer records.
- Compared Decision Tree, Naive Bayes, KNN and XGBoost models across Python, R, KNIME and Orange.
- Evaluated results with Accuracy, F1-Score and AUC and examined class imbalance and overfitting.

Certifications and Training

- **SQL for Data Analysis: Beginner to Advanced** – Udemy
- **Data Science and Machine Learning: 100-Day Bootcamp** (in Turkish) – Udemy
- **Machine Learning with Python** – IBM / Coursera

Languages

Turkish: Native **English:** B1 **German:** A2