

# Necati Furkan Colak

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Data science professional skilled in statistical analysis, machine learning, and software development, eager to solve complex problems across industries. Willing to apply data science skills to real-world business problems, especially in the areas of finance, supply chain and marketing.

## Education

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### University of Zurich

Master of Science in Data Science

September 2024 – July 2026

Zurich, Switzerland

### Bilkent University

Bachelor of Science in Industrial Engineering

September 2018 – January 2024

Ankara, Turkey

## Experience

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### İş Bankası – Largest private bank in Turkey

Data Scientist

November 2023 – August 2024

Istanbul, Turkey

- Designed a Python-based post-processing solution to improve the performance of underperforming retail banking products, resulting in a 10% increase in sales.
- Developed a collaborative filtering model in Python using the NeuMF algorithm to predict customers' next purchases, achieving 82% accuracy.

### Yapı Kredi Bankası – Third largest private bank in Turkey

Credit Risk Validation Intern

August 2022 – July 2023

Istanbul, Turkey

- Validated credit risk models, including Probability of Default (PD), Loss Given Default (LGD), and Exposure at Default (EAD), in accordance with IFRS 9 and Basel regulations.
- Performed backtesting, benchmarking, and discriminatory power analysis (AUC, KS, Gini) to ensure model robustness and regulatory compliance.

### Bilkent University

Undergraduate Python Tutor

September 2022 – January 2023

Istanbul, Turkey

- Assisted students in Python lab by helping them solve challenging problems and understand key concepts.

### Akbank – Fourth largest private bank in Turkey

Data Science Intern

June 2022 – July 2022

Istanbul, Turkey

- Conducted customer segmentation for a targeted campaign aimed at retired customers using K-Means in Python, achieving over 95% accuracy.
- Developed a Selenium-based web scraping tool to collect and structure promotional campaigns and pricing data from competitor banks into organized Excel reports.

## Projects

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### Real-Time Markdown Editor – Not Moogles Docs | *React, TypeScript, Node.js, Docker*

May 2025

- Collaborated in a 5-person team to develop a real-time Markdown editor supporting simultaneous editing, vault and note sharing, and integrated chat for efficient communication.
- Designed and implemented an interactive mind-mapping feature that enables users to visually organize and structure ideas alongside their Markdown content.

### How to Hedge Against Turkish Inflation? | *Pandas, Numpy, Docker, SQL*

January 2025

- Worked in a 3-person team analyzing central bank data and asset returns; created a synthetic SQL database and used pandas and NumPy to compute returns, correlations, and visualize market dynamics.
- Built and reported various investment portfolios based on different risk types, incorporating analytical insights into allocation strategies.

### Investment Challenge | *VBA, Microsoft Excel, SQL*

January 2024

- Led a competitive group project evaluating valuation offers for 15 companies, leveraging diverse financial instruments, including ESG credits and Exim-bank financing, and achieved the highest ranking.
- Performed Discounted Cash Flow analysis and calculated metrics (e.g., Equity IRR) to evaluate investment feasibility.

### Production Line Optimization | *Python, Gurobi, R, Django*

June 2023

- Developed an optimization model using Gurobi in Python to improve production line efficiency, achieving a 12% reduction in cycle time anomalies.
- Built a Python-based interface to monitor production line performance, enabling real-time anomaly detection and test station reordering.

## Technical Skills

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**Languages:** Python, R, SQL, TypeScript, Java

**Libraries & Frameworks:** pandas, NumPy, SciPy, matplotlib, Selenium, BeautifulSoup4, seaborn, scikit-learn, Gurobi, PySpark, Keras, TensorFlow, Django, Plotly, Flask, data.table, dplyr, ggplot2, caret, Shiny, React

**Concepts:** Data Analysis, Data Visualization, Machine Learning, Time Series Analysis, Regression Modeling, Optimization, Stochastic Modeling & Simulation, Linear/Non-linear Programming, Explainable AI, Deep Learning, Scientific Computing, OOP, Data Structures & Algorithms, Financial Engineering.

**Tools & Systems:** Jupyter Notebook, Hadoop, Spark, HBase, Docker, MapReduce, MongoDB, Git, Power BI, LaTeX

**Languages:** Turkish (Native), English (Advanced - IELTS: 7.5), German (Beginner - A2)

## Participations & Extracurricular Activities

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### Gunvor Career & Trading Event

Participant – Networking event focused on trading and analytics roles in commodity finance

**May 2025**

Geneva, Switzerland

### CEOx1Day Program – Odgers Berndtson

Finalist and Participant – Leadership program connecting top students with CEOs.

**March 2023**

Istanbul, Turkey