Burak Duru, Master of Science (MSc)

Data Analyst — Marketing, Business, Research

📍 Turkey & China

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Profile

Data analyst and **research scientist** with a **scientific, programming-intensive background**. Expertise in transforming large, complex datasets into reliable, actionable insights via exploratory analyses, time series forecasting, regression modelling, and clustering, plus scalable automations. **Advanced Python & SQL developer and Microsoft Excel wielder**; skilled in database crossmatching, data wrangling, visualization, scraping, statistical modelling, UI design, and LLM applications. Proven track record building reproducible, production-ready pipelines with API integrations, and version control, including a solo-developed full-stack personal blog website.

Training as a physicist/astronomer provides a rigorous statistical and scientific foundation, including quantitative research experience working with large datasets that arise naturally from studying the universe; practiced at extracting signal from observational and simulated data. My ability to collaborate across cultures was strengthened by **having studied at two of China's top universities** and through multicultural work experiences across academic and industry teams, enabling me to bridge methodological differences and **translate technical findings for non-native English speakers**. Known for a skeptical, statistically intuitive and evidence-driven mindset, meticulous attention to detail, persistent problem-solving, multilingualism and a **creative perspective**.

Technical Skills

- <u>Advanced</u> **Python** (Have worked with 20+ libraries including NumPy, Pandas, Matplotlib, SciPy, scikit-learn, PyTorch, Tensorflow…), **SQL** (PostgreSQL & MySQL), **NoSQL** (MongoDB & Atlas), **Microsoft Excel** (VBA & Power Query), **Google Sheets**, **Git**, **Jupyter Notebook**, **Visual Studio Code (VSCode)**.
- <u>Proficient</u> **R**, **Google Cloud Platform (GCP) & BigQuery**, **JavaScript** (Have worked with React, JQuery, Node.Js & Express), **Full Stack Web Development** (HTML, CSS, Bootstrap & Tailwind CSS), **Linux Kernel** (Ubuntu).
- <u>Working Knowledge of</u> **Google Analytics (GA4)**, **Tableau**, **Power BI**, **Amazon Web Services** (**AWS**), **Java**, **Wolfram: Mathmetica**, **LaTeX**.
- <u>Familiarity with</u> **N8N**, **Looker Studio**, **PHP**, **IDL/GDL**.

Experience

❖ **Research Student Scientist**   2022 – 2025

Ankara University   Ankara, Turkey

- Developed and optimized algorithms with Python to crossmatch multi-source, large-scale datasets (**1B+ records**) from international scientific databases.
- Designed SQL-based queries (joins, aggregations) to merge relational DBs; performed data wrangling and longitudinal analyses on structured & semi-structured data.
- Applied statistical methods (including **Bayesian Inference with MCMC Sampling**, Lomb-Scargle Periodogram, **Hypothesis Testing** and **Model Comparison**) on regular & irregular time-series data to assess posterior distributions and result consistency.
- Co-authored **peer-reviewed papers**; co-supervised an intern on data gathering.

❖ **Academic Engagements at Nanjing University**   China

- Academic Visit to Xinglong Observatory - NAOC   January 2025
- Academic Visit to Sichuan University, Dept. of Nuclear Engineering   November 2024
- 2024 National Planetary Science Conference   October 6 – 12, 2024

❖ **Intern/Volunteer**   October 2019 – June 2024

Kreiken Observatory   Ankara, Turkey

- Performed night-sky observations with multiple telescope systems; calibrated and reduced raw CCD images into utilizable datasets; carried out extensive data preprocessing and **exploratory data analyses (EDA)**, including missing value handling, outlier detection, normalization and feature selection to ensure statistical validity of scientific interpretation.

Scholarships

TÜBİTAK (The Scientific and Technological Research Council of Türkiye)

Fully Funded "1001 Research & Development" Scholar   March 2024 – December 2025

Languages

- Turkish — Native
- English — Advanced
- Chinese — Intermediate
- Korean — Beginner

Education

❖ **Nanjing University, School of Astronomy and Space Science**

Visiting Student, Astronomy and Space Science   September 2024 – June 2025

❖ **Peking University, School of Chinese as a Second Language**

Summer School, Chinese   July 2024 – August 2024

❖ **Ankara University, Graduate School of Natural and Applied Sciences**

Master of Science, Astrophysics (GPA 3.5/4.0)   September 2023 – February 2026

Thesis: Analysis of Possibly Decaying Hot-Jupiter Type Planets KELT-20 b and WASP-18 b

❖ **Ankara University, Faculty of Science**

Bachelor of Science, Physics (GPA: 3.5/4.0)   September 2018 – June 2022

Certifications & Training

(Selected — full list available on request)

- SQL 100 (**LeetCode**) & SQL 75 (**StrataScratch**)
- Data Science Tools — **IBM**
- 100 Days of Code: The Complete Python Pro Bootcamp — **Dr. Angela Yu**
- Using Python for Research— **HarvardX**
- An Intuitive Introduction to Probability — **University of Zurich**
- Data Driven Astronomy — **The University of Sydney**

Soft Skills & Extracurricular Interests

- **Art & Music |** Listening to Music, Playing Musical Instruments (Violin, Guqin, Piano), Photoshoot, Visiting Art Galleries, Acting & Drama.
- **Interactive |** Video Games, Video Game Development (Unreal Engine 5), Chess.
- **Curiosity & Microlearning |** Travelling, Exploring Different Cultures, Linguistics, Visiting School Campuses, Attending Conferences, Visiting Museums & Historical Exploration, Mythologies.
- **Multimedia, Photo/Video/Audio Processing |** Adobe: Photoshop, Lightroom, Premiere Pro, After Effects, Audition. VEGAS. DaVinci Resolve. FFmpeg.
- **Sports |** Tennis, Swimming, Volleyball, Archery, Badminton, Table Tennis.