UMIT KAVAK, PhD

Data Scientist

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SUMMARY

Data Scientist with a *PhD in Astronomy* and over 6 years of experience in data analysis and machine learning, specializing in Python and its key libraries, including NumPy, Pandas, SciPy, scikit-learn, TensorFlow, PyTorch, Keras, Matplotlib, and Seaborn, as well as expertise in astronomical data reduction with contributions at NASA (USA). **With a valid EU work permit,** I am seeking a Data Scientist position where I can apply my technical skills and analytical expertise to deliver innovative, data-driven insights that align with your company's mission.

EXPERIENCE

Data Scientist | Postdoctoral Researcher

Leiden University

- 📅 10/2023 - Present   📍 Leiden, Netherlands
- Discovered 2 previously unidentified stellar sub-structures, resulting in improving observational strategies by analyzing over a million spectra.
- Performed spectral baseline correction, astronomical data reduction, and implement ML techniques to spectral data cubes.

Associate Scientist | Data Scientist

NASA

- 📅 01/2022 - 10/2023   📍 Mountain View, California
- Developed advanced Python models using the least squares and Bayesian methods to compare real-world and predicted physical values (temperature, density) enhancing accuracy by 30%.
- Assisted innovating a technique using unsupervised machine learning to identify physical structures in our galaxy from image data, enhancing structural identification accuracy by 25%.
- Optimised GMM modelling code with parallel processing, resulting in a 30% reduction in computation time. Conducted quantitative data analysis, leading to the publication of 3 in peer-reviewed journals.

PhD Researcher | Kapteyn Institute & SRON

University of Groningen

- 📅 12/2016 - 12/2021   📍 Groningen, Netherlands
- Analyzed millions of radio and infrared spectra to determine physical parameters (mass, radius, speed) of star-forming regions.
- Discovered previously unknown stellar substructures in massive star-forming regions, resulting 5+ publication in world-class journals.
- Acquired and cleaned data from raw datasets (radio to X-ray images), preprocessed to minimize noise, and developed a data pipeline. Implemented a neural network, improving data cube quality by 30%.

STRENGTHS

👥 Team Player

Published over 10 peer-reviewed articles by collaborating with a global team of ~20 engineers, scientists, and students.

⚙️ Adaptability

Lived in 5 countries for my career and have worked in various international teams over 7+ years.

🖥️ Communication & Presentation

Given 40+ talks (including 5 invited talks) at various international platforms to technical and non-technical audiences. The latest work was highlighted in *press releases* and gave an interview to press.

🤖 Technical Expertise

Applied ML and AI from health to automotive fields, with experience in radio and infrared observatories. Created 12+ Python packages on GitHub, supporting scientific analysis and community needs.

KEY ACHIEVEMENTS

✨ Data Visualization Recognition

A figure from my article was honoured as the front cover of Volume 660 in the prestigious *Astronomy & Astrophysics* journal

📄 Academic Scholarship Recipient

Recipient of prestigious academic scholarships in astronomy, totalling approximately €300,000, awarded by institutions across the USA, NL, and TR.

🏅 Completion Degree

Bachelor's Degree in Astronomy and Space Sciences, awarded with distinction as the 2nd highest-ranking graduate in 2018.

SKILLS

Data Analysis   Machine Learning   AI   ETL   Big Data   Deep Learning   Web Scraping

Python   R   SQL   Tableau   Spark   Docker   HTML

LANGUAGES

English — Native ●●●●●

Turkish — Native ●●●●●

Kurdish — Advanced ●●●○○

Dutch — Beginner ●○○○○

EDUCATION

PhD in Astronomy | Kapteyn Astronomical Institute

University of Groningen - SRON

- 📅 12/2016 - 12/2021   📍 Groningen, Netherlands

Master of Science Astronomy and Space Sciences

University of Cologne & Istanbul University

- 📅 09/2012 - 08/2016
- 📍 Istanbul, Turkey | Cologne, Germany

Bachelor of Science, Astronomy and Space Sciences

Istanbul University

- 📅 09/2012 - 07/2012   📍 Istanbul, Turkey