Ceyhun Andaç

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WORK EXPERIENCE

KYOS Energy Consultancy B.V. | Quantitative Analyst/Developer — Haarlem, NL | 2022 – present

Develop, design and implement quantitative models for energy and commodity assets. Support and maintain the models that are already in use. The models are mostly in Python and/or MATLAB.

- Maintain current financial models written in MATLAB and Python
- Create and design new models and improve and optimize the existing models
- Model pricing and valuation, evaluate risk using optimization algorithms such as Dynamic Programming and Monte Carlo methods
- Forecast time-series and predict forward curves

Istanbul Technical University | Ph.D. Researcher/TA — Istanbul, TR | 2015 – 2022

Conduct research in the area of high energy astrophysics (see publications for details). Led laboratory classes and seminars for freshman engineering and physics students.

IPAG, Université Grenoble Alpes | Ph.D. Researcher — Grenoble, FR | 2020 - 2022

Conduct research in the area of computational theoretical high energy astrophysics (see publications for details). Use HPC tools and techniques to ran high intensity computations on two different clusters. Conduct python-based data analysis and visualization using big data tools and libraries (including numpy, pandas, statsmodels, matplotlib and scipy).

EDUCATION

Istanbul Technical University (ITU)

- Ph.D. in Physics/Astrophysics, September 2023 (expected)

- M.Sc. in Engineering Physics, 2015

- BA in Engineering Physics, 2012

Coursework:
• Calculus • Linear Algebra • (Probability) Statistics and Thermodynamics • C, Fortran • Numerical&Computational Methods in Physics • Nonlinear Physics • 2020 Astrosim Trainee (CINES, Montepellier, FR) • Linux Administration 1st level • Python / Django summer school • Various online lectures on time-series forecasting, Financial Engineering, and trading/crypto

WORKSHOPS & CERTIFICATES

IBM Data Science Professional | — (Online) | 2021
Coursera Online Specialization; 9 courses and a capstone project about DS, ML and various tools.

NVIDIA DLI - Fundamentals of Deep Learning | — (Online) | 2022
An online, all-day-long intense DL introduction to let academics jump start to the subject.

PUBLICATIONS

1. Andaç, I. C. et al. “Intra-pulse variability induced by plasmoid formation in pulsar magnetospheres”, *A & A*, 661A: A130, May 2022.
2. Sasmaz Mus, Sinem et al. “The First Day in the Life of a Magnetar: Evolution of the Inclination Angle, Magnetic Dipole Moment, and Braking Index of Millisecond Magnetars during Gamma-Ray Burst Afterglows”, *ApJ*, 886(1):5, Nov. 2019.
3. Eksi, K. Y. et al. “The Inclination Angle and Evolution of the Braking Index of Pulsars with Plasma-filled Magnetosphere: Application to the High Braking Index of PSR J1640-4631”, *ApJ*, 823(1):34, May. 2016.
4. Eksi, K. Y. et al. “The ultraluminous X-ray source NuSTAR J095551+6940.8: a magnetar in a high-mass X-ray binary”, *MnRAS*, 448:L40–L42, Mar. 2015.

PERSONAL PROJECTS

- **Supervised graduation thesis** with title: ”Representation of complex plasma dynamics with ordinary differential equations by machine learning” using sparse identification method, 2021.
- **Research project** in NSF Turkey about disc magnetosphere interactions of neutron stars, 2013-15.
- Ongoing toy-project on **algorithmic crypto trading** with python and **Binance API**.

One may take a look at my **portfolio** (continuously developing) on my website for a more detailed presentation of my publications and projects.

SKILLS

Languages: Python, MATLAB, C, C++, SQL, bash

ML&Scientific: numpy, scipy, pandas, scikit-learn, pytorch, tensor-flow, jupyter-notebook, Maple, Mathematica, Excel

Visualization: matplotlib, seaborn, Gnuplot

Dev. Tools: Git, Latex, Markdown, SSH, SLURM, CI/CD pipelines, conda/pip/poetry

OS & Administration: GNU-Linux, Unix/MacOS, Windows

AWARDS & SCHOLARSHIPS

- French Government Co-tutelle Ph.D. Scholarship (for 3 years)
- STSM Grant of PHAROS - COST Action CA16214 as a visiting researcher (3 months)
- 2019 IOAA Astronomy&Astrophysics Olympiads, National Team Leader