Ioannis Koutalios

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Education

M.Sc., Astronomy and Data Science
Leiden University, (September, 2024)

B.Sc., Physics
Aristotle University of Thessaloniki, (November, 2020)

Publications

Predicting binary neutron star postmerger spectra using artificial neural networks
Pesios, D., **Koutalios, I.**, Kugiumtzis, D., & Stergioulas, N.
Physical Review D, Sep 2024, doi: 10.1103/PhysRevD.110.063008

Research

M.Sc. Thesis Project: Applying a cross-power model for power suppression in FLAMINGO
supervised by Dr. Marcel van Daalen
September 2023 - June 2024

Reinforcement learning for adaptive optics and exoplanet imaging
supervised by Dr. Rico Landman, Dr. Thomas Moerland, and Dr. Aske Plaat
October 2023 - February 2024

M.Sc. Thesis Project: Finding the best exoplanets to search for exomoons by radial velocity
supervised by Dr. Matthew Kenworthy
March 2022 - December 2022

B.Sc. Thesis Project: Spectral Classification of Neutron Star Post-Merger Gravitational Wave Emission
supervised by Dr. Nikolaos Stergioulas
Gravitational waves group, Physics Department, Aristotle University of Thessaloniki
September 2019 - September 2020

Conference Presentations

BNAIC/BeNeLearn 2024: Joint International Scientific Conferences on AI
Poster Presentation, Reinforcement learning for adaptive optics and exoplanet imaging
Utrecht, The Netherlands, 18-20 November, 2024

79th Dutch Astronomers' Conference
Poster Presentation, Applying a cross-power model for power suppression in FLAMNGO
Egmond aan Zee, The Netherlands, 13-15 May, 2024

Conferences Attended

78th Dutch Astronomers' Conference
Leeuwarden, The Netherlands, 15-17 May, 2023

Gravitational-Wave Open Data Workshop (#3 - #7)
Remote, May 2020, May 2021, May 2022, May 2023, April 2024

2nd **g2net Training School**
University of Malta, Valetta, Malta, 9-13 March, 2020

School on Neutron Star Physics in the Era of Gravitational Wave Astronomy
Eberhard Karls University of Tuebingen, Germany, 13-15 November, 2019

14th **Hellenic Astronomical Conference**
Volos, Greece, 8-11 July, 2019

3rd **HEL.A.S. Summer School and DAAD School on Neutron Stars and Gravitational Waves**
Thessaloniki, Greece, 8-12 October, 2018

17th **Conference of the Hellenic Physical Society**
Thessaloniki, 15-18 March, 2018

Experience

Teaching Assistant for the Course "Reinforcement Learning" (M.Sc.)
Leiden University, 2024

Teaching Assistant for the Course "Science and the Public" (M.Sc.)
Leiden University, 2023 - 2024

Teaching Assistant for the Course "Astronomy Lab and Observing Project" (B.Sc.)
Leiden University, 2024

Private Tutor for Physics, Mathematics and Chemistry
2018 - 2024

Instructor for the Preparation of the Greek Team for the International Olympiad on Astronomy and Astrophysics
Summer 2016, Summer 2018, Summer 2019, Fall 2021, Summer 2022, Fall 2022, Summer 2023

Grading Assistant for the Course "Astronomy and Astrophysics"
Aristotle University of Thessaloniki, 2018-2020

Volunteer

Public Outreach Guide at the Astronomical Observatory of the Aristotle University of Thessaloniki
2018-2021

Distinctions

Scholarship from Cosmote for undergraduate studies
Greece, 2015-2019

International Olympiad on Astronomy and Astrophysics
Honorable Mention, Indonesia, 2015
Participation, Romania, 2014

Computer Skills

Experties: Python, Jupyter, Git (Github & Gitlab) Linux OS, LaTeX, VS Code
Familiar: SQL, C, Mathematica, Matlab
Machine and Deep Learning: PyTorch, Tensorflow, Keras, Scikit-learn, Jax
Data Science and Mining: Pandas, Numpy, Matplotlib, Seaborn, Scipy, Nbodykit
I.T. Skills: Bash, SSH, Anaconda, JupyterHub
github/gitlab link: https://github.com/johnkou97, https://gitlab.com/johnkou97

Languages

English (C2), German (B1), Greek (native speaker), Dutch (beginner)