

Orfeas Karathanasopoulos

Mathematician – Meteorologist, MSc

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SUMMARY

Passionate about atmospheric physics and chemistry simulations, exploring the applications of machine learning in weather forecasting, climate, and atmospheric pollution. Adept in performing mathematical analysis. Skilled at data (especially time-series data) analysis and management while applying statistical analysis and developing mathematical and data-driven models, mostly in physics and biology.

EDUCATION

BSc / *University of Crete – Heraklion, Greece*

September 2020

BSc in the Department of Mathematics and Applied Mathematics, focused on applied mathematics and mathematical models on physics and biology.

MSc / *University of Patras – Patras, Greece*

September 2022

MSc on “Applied Meteorology and Environmental Physics”. Physics Department, University of Patras.

- Member of Laboratory of Atmospheric Physics, University of Patras.
- Thesis Statement: “Investigation of the climate impact on West Nile Virus (WNV) vectors abundance”. (greek)
Thesis link: <https://nemertes.library.upatras.gr/items/bf11b631-7074-4217-867d-a2e5b1646f23>

EXPERIENCE

Research Fellow / *IERSRD - NOA - Athens*

March 2024 – now

REINFORCE (impRovEments in the simulation of aerosol-climate linkages in earth system models: From global to Regional scales) project, Institute for Environmental Research and Sustainable Development (IERSD), National Observatory of Athens (NOA), Athens, Greece.

- Meteorology and atmospheric chemistry simulations (WRF – Chem model).
- WRF –Chem model evaluation over Attica (Greece).
- Parallel and High Performance Computing (HPC).

Research Intern / *Laboratory of Atmospheric Physics (LapUp) - Patras*

October 2020 – September 2022

- Gathered, arranged, and corrected research data to create representative graphs and charts highlighting results for presentations.
- Completed research, compiled data, updated spreadsheets, and produced timely reports.
- Collaborated with research teams to develop project plans aligned with target timescales.

- Participated in lab meetings and project presentations.
- Provided support and guidance to junior lab staff.
- Analyzed results using analytical software and created reports.

Private Tutor / *Peri Epistimon* - Patras

December 2021 – October 2022

- Private lessons in secondary and higher education (Mathematics)

Private Tutor / *Self - employed* - Patras

December 2016 – October 2022

- Private lessons in secondary and higher education (Mathematics)

SEMINARS

- 01/2020: "Introduction to the Quantum Theory". P. D. Karageorge, Dept. of Mathematics and Applied Mathematics.
- 03/2021: "World's Meteorology Day". LapUp, University of Patras
- 05/2021: "Air Quality Monitoring and Management". EO4GEO, Training Action.
- 06/2021: "Early warning for mosquito borne epidemics at regional level". EO4GEO, Training Action.
- 06/2021: "NASA's Earth Observations for Energy Management". NASA's Applied Remote Sensing Training Program.
- 11/2021: "Solar resource and forecasting at municipality level". EO4GEO, Training Action.
- 03/2024: "HPC for beginners: Basic concepts, MPI and OpenMP". EuroCC@Greece, Training Action.
- 09/2024: "Machine Learning in Weather & Climate". ECMWF. Massive Open Online Course (MOOC)

PROJECTS

- Mathematical Modelling of Infectious Diseases: Vector-borne Diseases, the case of West Nile Virus. 2023 (English)

SKILLS

- Python (data management, statistical analysis, visualization, machine learning methods)
- Data extraction, analysis and management
- WRF – Chem model
- Matlab
- R
- Basic knowledge of Pytorch (Deep Learning)
- Basic knowledge of SQL and SPSS
- Basic knowledge of libRadtran, Panoply
- OS: Linux, Windows
- MS Office (Word, Excel, PowerPoint)

LANGUAGES

- Greek: Native
- English: Fluent
- French: Intermediate.

PERSONAL DETAILS

- Mandatory Military Service

February 2023 – November 2023

INTERESTS

- Sports
- Accordion, music
- Blood donation