



Ilias Bougoudis

Atmospheric Scientist

Data-driven applied atmospheric scientist, combining independence with team play. Excellent problem solver with 10 peer-reviewed publications on machine learning, air quality, and satellite remote sensing. Critical thinker with 6 years experience as a research scientist, focusing on tackling climate change. Adaptable to new problems and challenges.

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📍 Innsbruck, Austria

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EDUCATION

Doctor of Philosophy (PhD) (Magna cum laude)

Institute of Environmental Physics, University of Bremen

07/2016 - 10/2021

Bremen, Germany

- Satellite Remote sensing of halogens in the the Arctic troposphere, under the impact of Arctic Amplification.
- 6 publications in peer reviewed journals (satellite remote sensing, time-series analysis, machine learning).

Master Degree (Msc) (Excellent)

Department of Forestry and Management of the Environment, Democritus University

10/2012 - 06/2015

Orestiada, Greece

- Developing soft computing prototypes in the case of air pollution, using supervised and unsupervised machine learning algorithms.
- 4 publications in peer reviewed journals (air quality, clustering, regression, fuzzy logic).

Bachelor Degree (Bsc) (Very Good)

School of Informatics, Aristotle University

10/2006 - 09/2012

Thessaloniki, Greece

- Direction: Information and communication technologies in education.
- Created an Educational Video Game on Traffic Education.

TEACHING EXPERIENCE

Tutor of the Course: Inverse Methods and Data Analysis

Institute of Environmental Physics, University of Bremen

10/2016 - 02/2019

Bremen, Germany

- Linear algebra.
- Regression.
- Singular value decomposition.

Lecturer of the Course: Health Informatics

Technological Institute of East Macedonia and Thrace

02/2015 - 09/2015

Didymoteicho, Greece

- Databases.
- Electronic health record.

Seminar Organizer

Institute of Environmental Physics, University of Bremen

02/2017 - 07/2019

Bremen, Germany

- Organized the weekly seminar on physics and chemistry of the atmosphere (<https://www.iup.unibremen.de/Aktuelles/semPca/>).

WORK EXPERIENCE

Applied Atmospheric Scientist

LuftBlick

07/2022 - Present

Innsbruck, Austria

- Working in the Pandonia Global Network (<https://www.pandonia-global-network.org/>), funded by the European Space Agency (ESA), in collaboration with NASA.
- Calibration of Pandora instruments.
- Satellite validation.
- Data processing, formatting and analysis.

Scientific Employee

University of Bremen

07/2016 - 06/2022

Bremen, Germany

- Research scientist in the program: Arctic Amplification: Climate relevant atmospheric and surface processes and feedback mechanisms (AC)3 (<http://www.ac3-tr.de/>).
- Satellite remote sensing.
- Halogen chemistry.
- Time-series analysis.

Scientific Employee

Faculty of Mathematics and Informatics, University of Bremen

07/2016 - 06/2021

Bremen, Germany

- Associated research scientist in the program: PI-cubed: Parameter identification - analysis, algorithms, implementations (<https://www.uni-bremen.de/rtg-pi3>).
- Data analysis.
- Machine learning.

IT Specialist

Municipality

01/2014 - 06/2014

Didymoteicho, Greece

- Provided IT assistance to staff.
- Documented processes and performed diagnostic tests.

IT Specialist

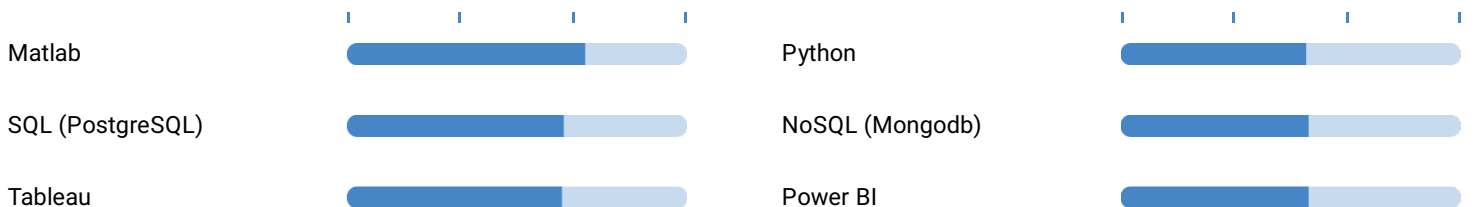
Greek Army

11/2011 - 07/2012

Didymoteicho, Greece

- Maintenance of databases.
- Monitoring of hardware, software and system performance metrics.

TECHNICAL SKILLS



SOFT SKILLS

Strong Analytical Skills

Problem Solving

Adaptability

Team Working

Independence

LANGUAGES

Greek

German

English

PUBLICATIONS

Peer-reviewed

Local and regional air pollution characteristics in Cyprus: A long-term trace gases observations analysis [↗](#)

2022

Science of The Total Environment

Peer-reviewed

Simulating tropospheric BrO in the Arctic using an artificial neural network [↗](#)

2022

Atmospheric Environment

Peer-reviewed

Spatial distribution of enhanced BrO and its relation to meteorological parameters in Arctic and Antarctic sea ice regions [↗](#)

2020

Atmospheric Chemistry and Physics

Peer-reviewed

First high-resolution BrO column retrievals from TROPOMI [↗](#)

2018

Atmospheric Measurement Techniques

Peer-reviewed

Fast and Low Cost Prediction of Extreme Air Pollution Values with Hybrid Unsupervised Learning [↗](#)

2016

Integrated Computer-Aided Engineering

Conference Proceedings

Semi-supervised Hybrid Modeling of Atmospheric Pollution in Urban Centers [↗](#)

2016

EANN 2016: Engineering Applications of Neural Networks

Conference Proceedings

Fuzzy Inference ANN Ensembles for Air Pollutants Modeling in a Major Urban Area: The Case of Athens [↗](#)

2014

EANN 2014: Engineering Applications of Neural Networks

Peer-reviewed

Atmospheric and Surface Processes, and Feedback Mechanisms Determining Arctic Amplification: A Review of First Results and Prospects of the (AC)3 Project [↗](#)

2022

Bulletin of the American Meteorological Society

Peer-reviewed

Long-term time series of Arctic tropospheric BrO derived from UV-VIS satellite remote sensing and its relation to first-year sea ice [↗](#)

2020

Atmospheric Chemistry and Physics

Peer-reviewed

Gryphon: a semi-supervised anomaly detection system based on one-class evolving spiking neural network [↗](#)

2020

Neural Computing and Applications

Peer-reviewed

FuSSFFra, a fuzzy semi-supervised forecasting framework: the case of the air pollution in Athens [↗](#)

2017

Neural Computing and Applications

Peer-reviewed

HISYCOL a Hybrid Computational Intelligence System for Combined Machine Learning: The case of Air Pollution Modeling in Athens [↗](#)

2016

Neural Computing and Applications

Conference Proceedings

Comparison of Self Organizing Maps Clustering with Supervised Classification for Air Pollution Data Sets [↗](#)

2014

AIAI 2014: Artificial Intelligence Applications and Innovations

Conference Proceedings

Computational Intelligence modeling and assessment of industrial noise: The case of wood manufacturing [↗](#)

2014

Engineering Intelligent Systems

CONFERENCES

IDEAS-QA4EO Cal/Val Workshop#4 (02/2023)

Potsdam, Germany

- ▣ Pandonia improved uncertainty estimation

3rd (AC)³ Science Conference on Arctic Amplification (10/2021)

Potsdam, Germany

- ▣ Feedback of atmospheric composition and ocean colour to Arctic amplification

AGU Fall Meeting 2019 (12/2019)

San Francisco, United States

- ▣ Long-term Time-series of Tropospheric BrO over the Arctic Derived From Satellite Remote Sensing and its Relation to Driving Mechanisms under the Impact of Arctic Amplification

ATMOS 2021 (11/2021)

Online

- ▣ An Artificial Neural Network Approach for Simulating Tropospheric BrO over the Arctic

EGU General Assembly 2020 (05/2020)

Online

- ▣ Investigating the Relationship between Arctic Tropospheric BrO retrieved using Satellite Remote Sensing and Sea Ice Age and Meteorological Parameters during Arctic Amplification

EGU General Assembly 2019 (04/2019)

Vienna, Austria

- ▣ Long-term Time-series of Arctic BrO Derived from Satellite Remote Sensing and its Relation to Driving Mechanisms under the Impact of Arctic Amplification

CONFERENCES

2nd (AC)³ Science Conference on Arctic Amplification (11/2018)

Bremerhaven, Germany

- Investigating long-term Evolution of Arctic BrO and Links to Driving Mechanisms and Sources under the Impact of Arctic Amplification
- Long-term Time-series of Arctic BrO Derived From Satellite Remote Sensing

Mathematical Signal Processing and Data Analysis (09/2017)

Bremen, Germany

- A Low Cost Forecasting Framework for Air Pollution

Artificial Intelligence Applications and Innovations (09/2014)

Rhodes, Greece

- Comparison of Self Organizing Maps Clustering with Supervised Classification for Air Pollution Data Sets

27th International Polar Conference (03/2018)

Rostock, Germany

- Long-term Time-series of Arctic BrO Derived From UV-VIS Satellite Remote Sensing

DPG Spring Meeting 2017 (03/2017)

Bremen, Germany

- Satellite Remote Sensing of Halogens in the Arctic Troposphere

Engineering Applications of Neural Networks (09/2014)

Sofia, Bulgaria

- Fuzzy Inference ANN Ensembles for Air Pollutants Modeling in a Major Urban Area: The Case of Athens

HONOR AWARDS

Poster Award (11/2018)

2nd (AC)³ Science Conference on Arctic Amplification, Bremerhaven, Germany

Poster Award (03/2018)

27th International Polar Conference, Rostock, Germany

INTERESTS



Chess



Video Games



Sports



Music