Ioannis Papoutsis

Curriculum Vitae

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In brief

I am an electrical and computer engineer with a research focus on the field of Earth Observation and artificial intelligence through the processing of big volumes of satellite and geospatial data. I hold a PhD on the use of advanced satellite interferometry techniques. I have a deep understanding of the Copernicus flagship programme, being the Operations Manager of the Greek node of European Space Agency Hubs that distribute Sentinel data, as well as a Copernicus Emergency Management Services Manager for Risk and Recovery.

I lead the AI4EO research group Orion Lab and my current research focuses on the exploitation, management and processing of big satellite data, and the use of artificial intelligence/deep learning for knowledge extraction using Earth Observation and geo-information based on novel information technologies, with emphasis on disasters management.

I have participated in 40 research projects funded mainly from EC (H2020 and FP7), ESA and Copernicus initiatives, from which 15 as a PI or a co-PI. As Principal Investigator (PI) for the period 2019-2022, I have attracted **2,3 M€** of research funds from competitive international frameworks. Currently, I am the coordinator of the H2020 project DeepCube that focuses on AI pipelines for big Copernicus data, and of the ESA-funded project SeasFire on seasonal wildfire forecasting with deep learning. I have co-authored 42 research articles in peer-reviewed journals and have 1,356 citations. My current Google Scholar h index is 20. I was part of the team that won the first prize at the 2014 Copernicus Masters Competition for platform FireHub.

Education

2014–2016 **Master in Business Administration (MBA)**, *ALBA Graduate Business School*, American College of Greece, *Part-time basis*.
GPA: 3.86/4, Highest Honours, Scholarship

2007–2014 **Doctor of Philosophy (PhD) in Earth Observation**, *School of Rural & Surveying Engineering*, National Technical University of Athens.
Scholarship

2002–2003 **Master of Science (MSc) in Technologies for Broadband Communications**, *Dept. of Electronic & Electrical Engineering*, University College London.
Distinction

| 1997–2002 | **Master of Engineering (M.Eng.)**, *School of Electrical & Computer Engineering*, National Technical University of Athens, *GPA – 7.2/10, Five-year degree*. |
| 1995–1997 | **High-School**, *Moraitis School*.
 GPA: 19.1/20 - Distinction |

PhD Thesis

Title	*Radar Interferometry for Monitoring Crustal Deformation*
Supervisors	Professor Demitrios Paradissis, Dr. Charalampos Kontoes & Professor Panayiotis Frangos
Description	The thesis engages with state-of-the-art satellite remote sensing technologies for monitoring geohazards from space.

Masters Thesis

Title	*Passive millimetre wave imaging using aperture synthesis*
Supervisors	Professor Hugh Griffiths & Professor Chris Baker
Description	The thesis explored novel antenna formations for passive imaging in millimetre wave band. Satellite missions MIRAS and SMOS were investigated.
Classification	Distinction

Undergraduate Thesis

Title	*Radiowave Propagation Problems affecting Local Multipoint Distribution Systems*
Supervisors	Professor Panagiotis Cottis
Description	The thesis explored RF attenuation and propagation characteristics of high frequency communication channels, due to rain. Collaboration with FORTHNET S.A.
Classification	Distinction - 10/10

Professional Experience

2023–current	**Assistant Professor**, National Technical University of Athens, School of Rural, Surveying and Geoinformatics Engineering, Greece. Tenure Track professor on "Remote sensing with empahis on artificial intelligence applications". Member of the Remote Sensing research group.
2019–2023	**Associate Researcher**, National Observatory of Athens, Institute for Astronomy, Astrophysics, Space Applications & Remote Sensing, Greece. Tenure Track researcher on "Satellite remote sensing for cross-sectorial applications, with emphasis on monitoring of natural disasters using big Earth Observation data". I lead the AI4EO research group Orion Lab, which consists of eight researchers, and I am the supervisor of 5 PhD researchers.

2006–2019 **Research Fellow**, NATIONAL OBSERVATORY OF ATHENS, INSTITUTE FOR ASTRONOMY, ASTROPHYSICS, SPACE APPLICATIONS & REMOTE SENSING, Greece.

Research interests include:
- SAR and optical Earth Observation based monitoring of natural and anthropogenic disasters, including earthquakes, volcanoes, landslides, urban subsidence and forest fires
- Development of processing chains using the Copernicus Sentinels satellites
- Machine learning on time-series of satellite data for agricultural monitoring applications
- Image processing for big data analytics
- Persistent Scatterer Interferometry techniques
- Semantic technologies for EO applications

2017–current **Operations Manager of Copernicus Data Hubs services**, NATIONAL OBSERVATORY OF ATHENS, INSTITUTE FOR ASTRONOMY, ASTROPHYSICS, SPACE APPLICATIONS & REMOTE SENSING, Greece.

The customer is ESA and the service is focused on the dissemination of Sentinel satellite data to different stakeholder groups. Duties include:
- Coordination of the Operations Team of the Greek node, consisting of four NOA staff
- Responsibility for the day-to-day operations and service monitoring
- Responsibility for Service Level Agreement monitoring
- ESA contact point for QoS queries
- Representation of the Greek node to the progress and review meetings

The Copernicus Data Hubs under my responsibility are:
- International Hub: Access is restricted to the international partners having agreements with the EC (NASA, USGS, NOAA & GA).
- Collaborative Hub 3: Access is restricted towards Collaborative Ground Segments.
- DIAS Hub 3: Access is restricted to the Copernicus Data and Information Access Services providers of cloud infrastructure.
- Africa Cast Hub: Access is restricted to EUMETSAT for accessing S3 products over Africa.
- S5P Expert Hub: Access to S5P is restricted expert users in Europe for validation and calibration purposes.
- S5PPreOps Hub: Open access to S5P product on a pre-operational basis.

2014–2019 **Copernicus EMS Manager**, NATIONAL OBSERVATORY OF ATHENS, INSTITUTE FOR ASTRONOMY, ASTROPHYSICS, SPACE APPLICATIONS & REMOTE SENSING, Greece.

Responsible for the NOA Copernicus Emergency Management Service team that delivers multi-hazard Risk & Recovery products:
- Managing a group of four scientists
- Scheduling of service delivery throughout a Service Activation
- Providing technical directions for the thematic modeling
- Quality controlling the intermediate and delivered products
- Participating to Copernicus EMS dissemination events

2009–2019 **Project, Technical & Bid Manager**, NATIONAL OBSERVATORY OF ATHENS, INSTITUTE FOR ASTRONOMY, ASTROPHYSICS, SPACE APPLICATIONS & REMOTE SENSING, Greece.

Coordination of bidding team and management of European Commission (H2020 & FP7), European Space Agency, Copernicus and national funded projects.

2014–2015 **EO specialist**, National Technical University of Athens, School of Rural and Surveying Engineering, Greece.

Contribution to the design and development of a multi-parametric infrastructure for processing SAR data, in the context of national project SEISMO - South Aegean Geodynamic And Tsunami Monitoring Platform.

2005–2006 **IT specialist**, e-Technology Knowledge, Athens, Greece.

Network installation, administration, and support in SMEs, conference events and public administrations.

Teaching Experience

2020–ongoing   **PhD thesis supervision**, National Observatory of Athens, Institute of Astronomy, Astrophysics, Space Applications and Remote Sensing.
Supervisor of 5 PhD students:
- Ioannis Prapas: Integrating physics modelling with Deep Learning for Earth Observation
- Spyros Kondylatos: Bayesian Deep Neural Networks for Earth Observation Applications
- Mara Sdraka: Deep Learning methods for multimodal satellite image fusion and downscaling
- Nikolaos-Ioannis Bountos: Deep Learning Methods for Multimodal EO Data Fusion
- Angelos Zavras: Computer Vision and Natural Language Processing for Remote Sensing image-to-text

2015–2018   **MSc thesis supervision**, National Observatory of Athens, Institute of Astronomy, Astrophysics, Space Applications and Remote Sensing.
Supervised postgraduate thesis:
- Angelos Zavras: Efficient Deep Learning models for Sentinel-2 LU/LC image classification
- Vassilios Sitokonstantinou: Analysis of Common Agricultural Policy (CAP) requirements using Remote Sensing
- Athanassios Drivas: Development of automated procedures for monitoring CAP obligations
- Alexios Apostolakis: Processing and visualisation of Sentinel satellite imagery

2019–ongoing   **Lecturer**, Univesity of Aegean.
Post-graduate teaching in the MSc 'Natural Hazards and Disasters Management' of the courses:
- Remote Sensing for Disaster Management: Synthetic Aperture Radar theory, Interferometric Synthetic Aperture Radar theory & lab

2015–2020   **Lecturer**, National Observatory of Athens, Institute of Astronomy, Astrophysics, Space Applications and Remote Sensing & University of Peloponnese, Faculty of Economy, Management and Informatics.
Post-graduate teaching in the MSc 'Space Science, Technologies and Applications' of the courses:
- Fundamentals of Remote Sensing
- Space Applications I
- Advanced Space Applications II

2013   **Trainer**, Harokopio University & European Space Agency, Athens.
4th Advanced Training Course in Land Remote Sensing:
- Hot-Spot & Fire Detection

2011–2013   **Tutor**, National Technical University of Athens, School of Rural & Surveying Engineering, Athens.
Tutoring undergraduates:
- Computer programming in C/C++

2006–2008   **Lecturer**, School of Pedagogical and Technological Education, Depts. of Mechanical & Electrical Engineering Educators, Athens.
Theoretical & laboratory teaching:
- Electrical Circuits and Electronics (independent teaching)
- Electrical Motors & Generators (independent teaching)
- Electric Energy Systems I & II (laboratory)
- High Voltage Systems (laboratory)

2006–2007 **Lecturer**, Technological Educational Institute of Chalkida, Dept. of Automation, Psaxna Evoias.
Theoretical lecturing:
  ○ Digital Signal & Image Processing (independent teaching)

2005–2006 **Lecturer**, National Center for Public Administration, Athens, Greece.
Seminar lecturing:
  ○ Geographic Information Systems (independent teaching)

2003–2005 **Lab demonstrator**, University College London, Dept. of Electronic & Electrical Engineering, London.
Lab assistant in MSc and undergraduate level:
  ○ RF and optics (laboratory)

Projects as PI & co-PI

As Principal Investigator (PI) for the period 2019-2022, I have attracted **2,3 M€** of research funds from competitive international frameworks.

2023-2026 **PI/Project coordinator: ThinkingEarth**, Copernicus Foundation Models for a Thinking Earth.
  ○ Horizon Europe DT-SPACE-02-55 (3m€ project budget, 220k€ for NOA)

2022-2023 **PI/Project coordinator: SeasFire**, Seasonal wildfire forecasting with Deep Learning.
  ○ ESA-Future EO-1 (150k€ project budget, 72k€ for NOA)

2021-2023 **PI/Project coordinator: DeepCube**, Explainable AI pipelines for big Copernicus data.
  ○ H2020-DT-SPACE-25 (4m€ project budget, 620k€ for NOA)

2021-2024 **PI: DRYADS**, A Holistic Fire Management Ecosystem for Prevention, Detection and Restoration of Environmental Disasters.
  ○ H2020-LC-GD-1-1-2020 (20m€ project budget, 485k€ for NOA)

2022-2023 **PI: SaudiInSAR**, Risk Prevention due to Petroleum Exploration.
  ○ Saudi Arabia Research & Development Office (7k€ for NOA)

2020-2022 **PI:7SHIELD**, Safety and Security Standards of Space Systems, ground Segments and Satellite data assets, via prevention, detection, response and mitigation of physical and cyber threats.
  ○ H2020-SU-INFRA-2019 (7m€ project budget, 428k€ for NOA)

2020-2022 **PI: EO4Flood**, Flood Hazard Atlas and Early Warning based on Big Earth Observation Data.
  ○ NOA project scholarship (8k€ project budget)

2018-2021 **co-PI**, Mapping groundwater dynamics in Al Ain, United Arab Emirates.
  ○ United Arab Emirates University research grant (200k€ project budget, 25k€ for NOA)
  ○ Setup of a hydro-technical model that will process remotely sensed information and generate forecasts for groundwater changes in the area.

2018-2019 **co-PI**, Early Adopter of Copernicus DIAS services.
  ○ Free access to storage, computing resources and tools offered by a DIAS service provider for a period of one year
  ○ Development of a big data processing chain for agricultural monitoring applications.

2015-2019	**co-PI**, Early Adopter of ESA's Geophysical Exploitation Platform for exploiting cloud resources.
	○ Free access to storage and computing resources
	○ Development of Persistent scatterer applications in Santorini Volcano.
2015-current	**co-PI**, South Aegean Geodynamic Monitoring Platform using InSAR techniques.
	○ ESA project for accessing ERS-1,2 & Envisat data
	○ Project ID: 29655
2014-2019	**PI**, Integrated monitoring of the Santorini Volcanic Complex.
	○ Free Access to TerraSAR-X and Tandem-X data
	○ Project ID: GEO1986, SanSyn
2014-2017	**co-PI**, Integration of X- and C-band SAR data with GPS measurements and gravity data for monitoring Santorini Volcanic Complex.
	○ Free access to COSMO-SkyMed and Radarsat-2 data
	○ Joint Italian and Canadian Space Agencies Announcement of Opportunity
2014-2017	**PI**, Geophysical hazard assessment in Greece via the integration of space and ground based geodetic measurements.
	○ Free access to Radarsat-2 data
	○ Project ID: 16831, GEOGREECE
2014-current	**co-PI**, Diachronic monitoring of geodetic activity in Greece and beyond.
	○ ESA project for accessing ERS-1,2 & Envisat data
	○ Project ID: 22013, GREECEGEOEYE
2007-2013	**co-PI**, Detection of Active Small-scale Surface Deformation in Greece Using Multi-temporal InSAR and Permanent Scatterers techniques.
	○ ESA project for accessing ERS-1,2 & Envisat data
	○ Project ID: 1489, SARPERS

Participation to projects

Participation as an external researcher to the following projects:

2017-ongoing	**Sentinels Data Hubs**, *Sentinels Rolling Archive User Access, Operations, Maintenance and Evolutions*.
	○ ESA, Operations
2019-2020	**e-shape**, *EuroGEOSS Showcases: Applications Powered by Europe*.
	○ H2020-SC5-2018-2, Innovation
2018-2019	**EOclinic**, *Rapid-Response EO-Based Solutions to Development Aid Project Requests*.
	○ ESA, Earth Observation Programmes
2018-2019	**EFFIS**, *Fire Monitoring Services for the European Forest Fire Information System*.
	○ JRC/IPR/2016/D.1/5011/OC
2018-2019	**FPCUP**, *Framework Partnership Agreement for the implementation of Copernicus User Uptake measures*.
	○ H2020-Caroline-Herschel-FPA
2018-2019	**EO4SD**, *EO for Sustainable Development in the Climate Resilience Domain*.
	○ ESA, Earth Observation Programmes

2017-2020 **EOPEN**, *Open Interoperable Platform for Unified Access and Analysis of Earth Observation data*.
- H2020-EO-2-2017-EO Big Data Shift, Research & Innovation

2017-2019 **MarineEO**, *Bridging Innovative Downstream EO and Copernicus enabled Services for Integrated maritime environment, surveillance and security*.
- H2020-EO2-2016, Pre-Commercial Procurement

2017-2020 **NextGEOSS**, *The next generation of the GEOSS Data Hub*.
- H2020-SC5, Research & Innovation

2017-2018 **EXCELSIOR**, *ERATOSTHENES: Excellence Research Centre for Earth Surveillance and Space-Based Monitoring of the Environment*.
- H2020-WIDESPREAD-2016-2017, Coordination & Support

2016-2018 **GEO-CRADLE**, *Integrating state-of-the-art EO activities in the regions of North Africa, Middle East, and Balkans*.
- H2020-SC5, Coordination & Support

2016-2018 **RECAP**, *Personalized public services in support of the implementation of the CAP using EO*.
- H2020-INSO-ICT, Innovation action

2015-2018 **Copernicus-EMS**, *Emergency Management Services for Risk & Recovery activations*.
- JRC/Copernicus

2015-2018 **DRR**, *Disaster Risk Reduction using innovative data exploitation methods and space assets*.
- ESA General Studies Programme (GSP)

2013-2016 **BEYOND**, *Building a Center of Excellence for EO-based monitoring of natural disasters*.
- FP7 REGPOT

2014-2016 **LDA**, *Large scale demonstrator in Athens, integrating Copernicus data with GNSS, for mobile platforms*.
- EC, European Mobile and Mobility Industries Alliance

2014-2015 **SEISMO**, *South Aegean Geodynamic And Tsunami Monitoring Platform*.
- Greek Ministry of Development, Research

2012-2014 **SWeFS**, *Sensor Web Fire Shield for dynamic data-driven assimilation towards mitigation of environmental risks*.
- National-Thalis, Research

2010-2013 **TELEIOS**, *Virtual Observatory Infrastructure for Earth Observation Data, based on semantic and array database technologies*.
- FP7-ICT-2009-5, Collaborative project

2010-2012 **MASSIVE**, *Estimating and mapping seismic hazard in urban areas*.
- EC-DG ENV, Innovation

2009-2012 **SAFER**, *Services and Applications for Copernicus Emergency Response*.
- EC-DG ENTERPRISE, Research & Innovation

2009-2012 **linkER**, *Support the operational use of GMES Emergency Response Service products across the whole European Union.*
- FP7, Coordination & Support

2006-2009 **RISKEOS**, *Framework to develop and validate prototype services for Emergency Response.*
- ESA, Research

2006-2009 **3HAZ-CORINTH**, *Measure, model and predict the processes leading to earthquakes, landslides, submarine slides and tsunamis, and their effect in term of hazard.*
- FP6-2003-GLOBAL-2, Research

2006-2008 **Excellence**, *Novel image processing techniques for satellite data.*
- Greek Ministry of Development, Research

Contribution to the development of online services

2022 Next day fire danger forecasting service using multimodal EO and non-EO data and deep learning modeling.

2022 Early warning service for volcanic unrest via deep learning on Interferometric SAR data.

2018 Online crop identification service using time-series of Sentinel-2 data over the DIAS ONDA big EO data cloud platform

2017 GeoHub: a fully automated Sentinel-1 application that estimates the ground deformation due to geophysical processes based on satellite interferometry

2017 Big data processing over Santorini volcano with Persistent Scatterer Interferometry:
- the 1992-2000 pre-unrest period with ERS-1,2 data
- the 2011-2012 unrest period with Envisat data
- the 2012-2013 post unrest period with TerraSAR-X data
- the 2012-2016 post unrest period with Radarsat-2 data
- the 2015 post unrest period with COSMO-SkyMed data

2014 FireHub: A national scale forest fire management platform based on EO, providing the following services:
- Real-time fire monitoring system based on multi-modal satellite data
- Forest fire smoke dispersion estimation
- Daily, weekly and seasonal mapping of burned areas
- Diachronic Mapping of Burned Areas over Greece (1984-2017) using HR satellite data

Open source data & software

GitHub repo **Sen4AgriNet:** A harmonized multi-country, multi-temporal benchmark dataset for agricultural Earth Observation Machine Learning applications

GitHub repo **Hephaestus:** A large scale multitask dataset towards InSAR understanding

GitHub repo **EfficientBigEarthNet:** Efficient deep learning models for land cover image classification

GitHub repo **SeasFire Cube:** A Global Dataset for Seasonal Fire Machine Learning Modeling in the Earth System

FireCube: A Datacube and models for the analysis of wildfires in Greece

Kuro Siwo: A deep learning ready Sentinel-1 dataset for flood extent mapping

Scholarships

2015 Athens International Airport 'Eleftherios Venizelos' Scholarship for the ALBA MBA tuition fees (10k €)

2009 4-year PhD scholarship from the National Technical University of Athens (31k €)

2003 Young Members Conference Bursary for attending ICAP conference

1998 Chiotinios Undergraduate Studies Scholarship for exceptional performance at the national entry exams.

Awards

2016 Award for graduating first (highest honours) in the ALBA MBA

2014 1st prize at the Copernicus Masters Competition for platform FireHub (40k € in kind)

2014 Award for publishing a paper in a high impact international peer-reviewed journal as a PhD student – Thomaidio Institution

2013 3rd research paper prize in the 11th International Semantic Web Conference

2002 Award for publishing a paper in an international peer-reviewed journal as an undergraduate student – Thomaidio Institution

1997 Top Achiever Award – High School

Relevant experience

Attracting funds Over the last decade I have actively contributed in securing funds from competitive programs (EU, ESA, National Programs), as well as from International Funding Organisations amounting to 6 M€.

Research group leader Leader of the Orion Lab research group on AI for big Copernicus data. The group consists of eight researchers.

Open Science My group supports the creation of open source projects and datasets. Our work is hosted in Orion Lab GitHub repo.

Operations team leader Operations manager of a team of 4 DevOps in operating the Sentinels Hubs on behalf of ESA.

EO infrastructure	Contribution to the operation of **national infrastructures** for satellite remote sensing: ○ The Hellenic Mirror Site providing near real-time satellite data to the international research community and the private sector, from the Sentinels Copernicus missions. ○ The X-/L-band acquisition antenna for real-time satellite data reception from missions EOS (AQUA, TERRA)/NASA, SUOMI-NPP/NASA, NOAA/AVHRR, METOP, FY, and corresponding archiving facility. The range of reception is the whole of Southeast Europe, North Africa, Middle East and the Balkans. ○ The satellite acquisition antenna (DVB-2) and archiving facility for the real time reception of data from EUMETSAT missions (MSG1, MSG2, MSG3). ○ The IntHub, DIASHub, CollHub, AfricaCastHub, S5PexpertHub, S5PpreopsHub for distributing 15Tbytes/day of Sentinel data on behalf of ESA.
Independent teaching	Independent teaching of 7 semester courses.
Thesis supervision	Supervisor of five PhD students. Supervised four postgraduate students for their final MSc project in remote sensing.
Thesis examiner	External examiner for two undergraduate thesis.
Reviewer	External reviewer in scientific journals for: Remote Sensing of Environment, IEEE Transactions on Geoscience and Remote Sensing, Remote Sensing, Sensors, Geocarto International, GIScience and Remote Sensing.
Chair	Chair of the Natural & Man Made Disasters session of the 38th Annual EARSeL Symposium in 2018.
Advisory Board	Member of the AI4Copernicus H2020 project advisory board.
Proposal evaluator	Member of the H2020 external evaluators registry for the Space calls.
Conferences & workshops organisation	Organised or participated to the organisation of the following events: ○ Artificial Intelligence for Big Satellite Data, Online Workshop, 2021. ○ BEYOND Final Workshop, Electra Palace, Athens, Greece, 2016. ○ EGU 2015, Dedicated Splinter Session of BEYOND Center, Vienna, Austria, 2015. ○ ONE step... BEYOND Workshop, ESRIN, Frascati, Italy, 2015. ○ 2nd South-Eastern Europe GEO Workshop on Integrating Earth Observation Data and Services for monitoring the Environment, protecting the citizens and stimulating the regional economic growth, Athens, Greece, 2014.
Training events	Organised a five-day training event on SAR Interferometry delivered by Sarmap.
Engagement with Press	Interacted with journalists for issuing scientific press releases, online articles, radio & TV interviews (Indicatively for the use of artificial intelligence in remote sensing: Youtube).
International exposure	Representative of the National Observatory of Athens to more than 30 international events (review & project meetings, EC policy sessions, international workshops, dissemination events, etc.)

Technical skills

Computer	Linux, Microsoft Windows, Microsoft Office, OpenOffice, LaTeX
Programming	PYTHON, C++, Shell scripting
Scientific	Signal processing, geoinformatics, Matlab, SPSS, AutoCAD, Mathematica
Rem. Sensing	ArcGIS, ERDAS IMAGINE, ENVI
Machine learning	PyTorch, TensorFlow, scikit-learn, etc.
Specialised	s/w for Radar Interferometry: GAMMA, StaMPS, ROI_PAC, DORIS, DIAPASON, SARscape, Sentinel-1 toolbox

Transferable Professional Skills

Project management	Business writing including proposal coordination, synthesis and consolidation, EC & ESA project management, deliverables drafting and presentation in EC review meetings
Organizational	Co-organised and administered workshops, conferences and professional meetings
Leadership	Leader of Orion Lab, an eight-member AI4EO research group with diverse backgrounds
Communication	Experienced in and enjoying giving oral presentations to large audiences

Courses & seminars

2020	DEEP LEARNING SPECIALIZATION, Coursera
2016	MACHINE LEARNING, Coursera
2014	INTERACTIVE PROGRAMMING IN PYTHON, COMPUTATIONAL METHODS FOR DATA ANALYSIS, Coursera
2007	ADVANCED TRAINING COURSE ON LAND REMOTE SENSING, Lisbon, European Space Agency
2004	CERTIFICATE ON GEOGRAPHIC INFORMATION SYSTEMS, National Technical University of Athens

Languages

Greek	Mothertongue	
English	Expert	*Professional business writing & communication*
French	Intermediate	*'Certificat'*

Military Obligations

2012	**Military Obligations fulfilled**, *Hellenic Navy, mostly served as an IT expert in the Databases Department of the Naval Training Administration.*

Recommendations

Recommendations are available upon request

Publications

I have published 42 research articles in peer-reviewed journals and have 1,115 citations. My current Google Scholar h index is 17. See the following url for my citations record: Google Scholar

Book chapters

B1

Charalampos Kontoes, Ioannis Papoutsis, Themistocles Herekakis, Emmanuela Ieronymidi, and Iphigenia Keramitsoglou. *Remote Sensing Techniques for Forest Fire Disaster Management: The FireHub Operational Tool*. Taylor and Francis, 2017

B2

Constantinos Loupasakis, Ioannis Papoutsis, and Konstantinos G Nikolakopoulos. Special issue "mapping and monitoring of geohazards with remote sensing technologies", 2023

Journals - AI conferences

J42

Ioannis Prapas, Nikolaos Ioannis Bountos, Spyros Kondylatos, Dimitrios Michail, Gustau Camps-Valls, and Ioannis Papoutsis. Televit: Teleconnection-driven transformers improve subseasonal to seasonal wildfire forecasting. *arXiv preprint arXiv:2306.10940*, 2023

J41

Spyros Kondylatos, Ioannis Prapas, Gustau Camps-Valls, and Ioannis Papoutsis. Mesogeos: A multi-purpose dataset for data-driven wildfire modeling in the mediterranean. *arXiv preprint arXiv:2306.05144*, 2023

J40

Maria Ioannidou, Alkiviadis Koukos, Vasileios Sitokonstantinou, Ioannis Papoutsis, and Charalampos Kontoes. Assessing the added value of sentinel-1 polsar data for crop classification. *Remote Sensing*, 14(22):5739, 2022

J39

Ioannis Papoutsis, Nikolaos Ioannis Bountos, Angelos Zavras, Dimitrios Michail, and Christos Tryfonopoulos. Benchmarking and scaling of deep learning models for land cover image classification. *ISPRS Journal of Photogrammetry and Remote Sensing*, 195:250–268, 2023

J38

Spyros Kondylatos, Ioannis Prapas, Michele Ronco, Ioannis Papoutsis, Gustau Camps-Valls, María Piles, Miguel-Ángel Fernández-Torres, and Nuno Carvalhais. Wildfire danger prediction and understanding with deep learning. *Geophysical Research Letters*, 2022

J37

Maria Sdraka, Ioannis Papoutsis, Bill Psomas, Konstantinos Vlachos, Konstantinos Ioannidis, Konstantinos Karantzalos, Ilias Gialampoukidis, and Stefanos Vrochidis. Deep learning for downscaling remote sensing images: Fusion and super-resolution. *IEEE Geoscience and Remote Sensing Magazine*, 2022

J36

Nikolaos Ioannis Bountos, Dimitrios Michail, and Ioannis Papoutsis. Learning from synthetic insar with vision transformers: The case of volcanic unrest detection. *IEEE Transactions on Geoscience and Remote Sensing*, 2022

J35

Nikolaos Ioannis Bountos, Ioannis Papoutsis, Dimitrios Michail, Andreas Karavias, Panagiotis Elias, and Isaak Parcharidis. Hephaestus: A large scale multitask dataset towards insar understanding. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, pages 1453–1462, 2022

J34

Dimitrios Sykas, Maria Sdraka, Dimitrios Zografakis, and Ioannis Papoutsis. A sentinel-2 multiyear, multicountry benchmark dataset for crop classification and segmentation with deep learning. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 15:3323–3339, 2022

J33

Ioannis Prapas, Spyros Kondylatos, Ioannis Papoutsis, Gustau Camps-Valls, Michele Ronco, Miguel Ángel Fernández-Torres, Maria Piles Guillem, and Nuno Carvalhais. Deep learning methods for daily wildfire danger forecasting. *Thirty-sixth Conference on Neural Information Processing Systems, NeurIPS21, Workshop on Artificial Intelligence for Humanitarian Assistance and Disaster Response*, 2021

J32

Vasileios Sitokonstantinou, Alkiviadis Koukos, Thanassis Drivas, Charalampos Kontoes, Ioannis Papoutsis, and Vassilia Karathanassi. A scalable machine learning pipeline for paddy rice classification using multi-temporal sentinel data. *Remote Sensing*, 13(9), 2021

J31

Nikolaos Ioannis Bountos, Ioannis Papoutsis, Dimitrios Michail, and Nantheera Anantrasirichai. Self-supervised contrastive learning for volcanic unrest detection. *IEEE Geoscience and Remote Sensing Letters*, pages 1–5, 2021

J30

Charalampos Kontoes, Constantinos Loupasakis, Ioannis Papoutsis, Stavroula Alatza, Eleftheria Poyiadji, Athanassios Ganas, Christina Psychogyiou, Mariza Kaskara, Sylvia Antoniadi, and Natalia Spanou. Landslide susceptibility mapping of central and western greece, combining ngi and woe methods, with remote sensing and ground truth data. *Land*, 10(4), 2021

J29

Muhagir El Kamali, Ioannis Papoutsis, Constantinos Loupasakis, Abdelgadir Abuelgasim, Khalid Omari, and Charalampos Kontoes. Monitoring of land surface subsidence using persistent scatterer interferometry techniques and ground truth data in arid and semi-arid regions, the case of remah, uae. *Science of The Total Environment*, 776:145946, 2021

J28

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J27

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M. Koubarakis, K. Kyzirakos, M. Karpathiotakis, C. Nikolaou, S. Vassos, G. Garbis, M. Sioutis, K. Bereta, D. Michail, C. Kontoes, I. Papoutsis, T. Herekakis, S. Manegold, M. L. Kersten, M. Ivanova, H. Pirk, Ying Zhang, M. Datcu, G. Schwarz, O. C. Dumitru, D. E. Molina, K. Molch, U. D. Giammatteo, M. Sagona, S. Perelli, T. Reitz, E. Klien, and R. Gregor. TELEIOS: A Database-Powered Virtual Earth Observatory. In *Proceedings of International Conference on Very Large Data Bases 2012*, Istanbul, Turkey, August 2012

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C Kontoes, Iphigenia Keramitsoglou, I Papoutsis, T Herekakis, D Michail, P Xofis, Manolis Koubarakis, K Kyzirakos, M Karpathiotakis, Charalampos Nikolaou, et al. Operational wildfire monitoring and disaster management support using state-of-the-art EO and Information Technologies. In *Earth Observation and Remote Sensing Applications (EORSA), 2012 2nd International Workshop on*, pages 196–200, Shangai, China, 2012

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C. Kontoes, I. Papoutsis, D. Michail, T. Herekakis, M. Koubarakis, K. Kyzirakos, M. Karpathiotakis, C. Nikolaou, M. Sioutis, G. Garbis, S. Vassos, I. Keramitsoglou, M. Kersten, S. Manegold, and H. Pirk. Wildfire monitoring via the integration of remote sensing with innovative information technologies. In *European Geosciences Union, General Assembly*, Vienna, Austria, April 2012

C13
C. Kontoes, I. Keramitsoglou, I. Papoutsis, N. Sifakis, and P. Xofis. National scale mapping of burnt areas as a tool for effective development of wildfire management strategy. Application on the two devastating fire seasons of 2007 and 2009 in Greece. In *8th International EARSEL workshop*, Stressa, Italy, October 2012

C12
I. Papoutsis, C. Kontoes, and D. Paradissis. ERS-Envisat cross-interferometry in the Athens metropolitan area. In *European Space Agency, FRINGE 2011*, ESA SP-697, Frascati, Italy, September 2011

C11
M. Koubarakis, K. Kyzirakos, M. Karpathiotakis, C. Nikolaou, M. Sioutis, S. Vassos, D. Michail, T. Herekakis, C. Kontoes, and I. Papoutsis. Challenges for Qualitative Spatial Reasoning in Linked Geospatial Data. pages 33–38, Barcelona, Spain, July 2011

C10
I. Papoutsis, C. Kontoes, B. Massinas, D. Paradissis, and P. Frangos. Assessing the pre-seismic and post-seismic displacement in the Athens metropolitan area by SAR Interferometric Point Target Analysis, using ERS and Envisat datasets. In *European Space Agency, FRINGE 2009*, Frascati, Italy, November 2009

C9
Ioannis Papoutsis, Charalambos Kontoes, and Gerassimos Papadopoulos. DInSAR study for the earthquake of 8 June 2008 in NW Peloponnese. In *31st General Assembly of the European Seismological Commission ESC*, Crete, Greece, September 2008

C8
P. Elias, C. Kontoes, I. Papoutsis, and I. Kotsis. Small scale surface deformation detection of the gulf of Corinth (Hellas) using Permanent Scatterers technique. In *Geoscience and Remote Sensing Symposium, 2007. IGARSS 2007. IEEE International*, pages 4659 –4662, Barcelona, Spain, july 2007

C7
P. Elias, C. Kontoes, I. Papoutsis, and I. Kotsis. Small scale linear deformation detection by using permanent scatterers technique applied to Athens and Gulf of Corinth (Hellas). In *European Space Agency, Envisat Symposium*, Montreux, Switzerland, April 2007

C6
I. Papoutsis, C.J. Baker, and H.D. Griffiths. Netted Radar and the Ambiguity Function. In *Electro-Magnetic Remote Sensing, 2nd Annual Technical Conference*, Edinburgh, UK, June 2005

C5
I. Papoutsis, C.J. Baker, and H.D. Griffiths. Netted radar and the ambiguity function. In *Radar Conference, 2005 IEEE International*, pages 883–888, Virginia, USA, May 2005

C4

I. Papoutsis and V. Papanikolaou. Exploitation of GPS signals for remote sensing applications. In *6th National Environmental Conference*, Thessaloniki, Greece, December 2004

C3

I. Papoutsis, C.J. Baker, and H.D. Griffiths. radar network using FM radio broadcasters. In *London Communication Symposium*, London, UK, September 2004

C2

I. Papoutsis, C.J. Baker, and H.D. Griffiths. Fundamental performance limitations of radar networks. In *Electro-Magnetic Remote Sensing, 1st Annual Technical Conference*, London, UK, May 2004

C1

A.D. Panagopoulos, V.S. Papanikolaou, J.E. Papoutsis, G. Chatzarakis, J.D. Kanellopoulos, and P.G. Cottis. A new coverage prediction method for local multipoint distribution systems. In *Antennas and Propagation, 2003. (ICAP 2003). Twelfth International Conference on (Conf. Publ. No. 491)*, volume 1, pages 437–440, March 2003

Invited scientific & technical talks

TS17

Ioannis Papoutsis. Seasonal widlfire forecasting with deep learning, 2022. Invited talk in ESA Living Planet Symposium

TS16

Ioannis Papoutsis. DeepCube: Explainable Artificial Intelligence Pipelines for big Copernicus Data, 2020. European Commission Virtual Workshop on Big Data and Artificial Intelligence for Earth Observation

TS15

Ioannis Papoutsis. Covid-19 Risk Assessment Web Platform, 2020. EURISY-SGAC Webinar Tracing Apps and COVID-19 containment- Legal Threats and Cyber Challenges

TS14

Ioannis Papoutsis. The use of satellite radar interferometry for land subsidence detection, 2020. United Arab Emirates University, Al Ain, United Arab Emirates

TS13

Ioannis Papoutsis. Sar & interferometric sar, 2019. ISPRS SC Summer School 2019: New Remote Sensing Technology for Smart Future, Korea University, Seoul, South Korea

TS12

Ioannis Papoutsis. The early warning platform geObservatory for the systematic monitoring of geohazards, 2019. Greek National Group of IAEG, Athens, Greece

TS11

Ioannis Papoutsis. Combining multi-frequency sar interferometric products for the systematic monitoring of geohazards, 2019. Earth Science and Applications of Satellite X-Band Synthetic Aperture Radars in Synergy with Multi-Frequency Sensors, Surface Networks, and Modeling, Hanoi, Vietnam

TS10

Ioannis Papoutsis. Radar remote sensing and satellite interferometry, 2018. Cyprus University of Technology, Limassol, Cyprus

TS9

Ioannis Papoutsis. Sentinels greek hub: a global access node for copernicus satellite data in greece, 2018. Greek Research and Technology Network, Athens, Greece

TS8

Ioannis Papoutsis and Charalampos Kontoes. Use of satellite data for the monitoring of CAP through the RECAP, 2017. Policy Session at DG-AGRI

TS7

Ioannis Papoutsis. Earth observation for the delivery of operational services, 2018. United Arab Emirates University, Al Ain, United Arab Emirates

TS6

Ioannis Papoutsis and Charalampos Kontoes. Status and showcase of the Hellenic Collaborative GS, 2016. Sentinel Collaborative Ground Segment Technical Workshop

TS5

Ioannis Papoutsis and Charalampos Kontoes. The role of the greek sentinel collaborative ground segment for the Copernicus & GEO data commercial uptake in the region of Balkans, Middle East & North Africa, 2016. EC Workshop in EU Research and Innovation in support of the Earth Observation Market

TS4

Ioannis Papoutsis. Satellite and airborne monitoring of geohazards - BEYOND GeoHub, 2016. Seismological conference organised by the Geodynamics Institute

TS3

Ioannis Papoutsis, Mariza Kaskara, Demitris Paradissis, and Charalampos Kontoes. Monitoring Geodetic Activity in South Aegean from Space, 2015. International Workshop on the volcanic and geodynamic field of the South Aegean

TS2

Ioannis Papoutsis. Monitoring Santorini volcano from space in the framework of BEYOND Center of Excellence, 2014. International Geo-Cultural Symposium - Kaldera 2014

TS1

I. Papoutsis. BEYOND Center of Excellence for monitoring geophysical activity and geohazard mapping, May 2014. 2nd Tectonic Geodesy Workshop

Invited communication & dissemination talks

TC19

Ioannis Papoutsis. Artificial intelligence and big earth observation data for enhanced disaster risk management, 2022. EURISY National Workshop Greece: Satellite-based Services for Disaster Management

TC18

Ioannis Papoutsis. Explainable artificial intelligence pipelines for emergency management, 2021. Copernicus Emergency Management Service Week

TC17

Ioannis Papoutsis. Artificial intelligence and big data technologies for earth observation, 2021. EXPANDEO 2021: Artificial Intelligence for Data in Europe

TC16
Ioannis Papoutsis. Satellite earth observation for climate change, 2021. CGS School, Athens, Greece

TC15
Ioannis Papoutsis. Satellite earth observation, 2020. 1st Junior High School & 3rd Senior High School, Keratsini, Piraeus Greece

TC14
Ioannis Papoutsis. Beyond/noa services in the framework of copernicus programme, for the preparedness, response and mitigation of the impacts of natural disasters, 2019. Workshop on the contribution of the Research Centers for combating natural disasters, Athens, Greece

TC13
Ioannis Papoutsis. Services of the beyond center of earth observation for natural disasters management, 2019. Thessaloniki International Fair, Thessaloniki, Greece

TC12
Ioannis Papoutsis. Beyond: Satellite monitoring of natural disasters, 2019. Researcher's night, Athens, Greece

TC11
Ioannis Papoutsis. Services of the beyond center of earth observation for natural disasters management, 2019. Heraklion Regional Authority, Heraklion, Crete, Greece

TC10
Ioannis Papoutsis. Earth observation for the delivery of operational services, 2019. CGS school and Kamatero Public schools, Athens, Greece

TC9
Ioannis Papoutsis. Natural Disaster Management through the BEYOND European Center for Excellence of Satellite Remote Sensing, 2018. Presentation to the Greek Disaster Management and Operations Coordination Center of the Hellenic Police Force Headquarters

TC8
Ioannis Papoutsis. Hazard and risk assessment of natural disasters through the Copernicus European Earth Observation Program, 2017. Presentation to the Coordinating Metropolitan Committee for Civil Protection and Security of the Region of Attica

TC7
Ioannis Papoutsis. Copernicus EMS: Multi-hazard assessment - Risk & Recovery, 2016. The Final BEYOND Workshop

TC6
Ioannis Papoutsis. Satellite and airborne monitoring of geohazards - BEYOND GeoHub, 2016. The Final BEYOND Workshop

TC5
Ioannis Papoutsis. Exploitation of BEYOND capacities, 2015. One Step BEYOND Workshop

TC4
Ioannis Papoutsis. Spaceborne and airborne geohazard monitoring, 2015. One Step BEYOND Workshop

TC3

Ioannis Papoutsis and Charalampos Kontoes. Operational services for the management of forest wildfires, using space-based technologies, 2014. Presentation to a consuls meeting organised by the Greek Ministry of Foreign Affairs

TC2

I. Papoutsis. BEYOND Center of Excellence for EO-based monitoring of natural disasters, September 2014. MOWE-IT Workshop

TC1

I. Papoutsis. Monitoring geophysical activity from Space, in the framework of BEYOND Center of Excellence, June 2014. 8th GEO European Projects Workshop (GEPW-8)