



Polychronis (Pol) Kolokoussis

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<https://www.linkedin.com/in/pol-kolokoussis-03a71a57/> | **ORCID:**

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<https://scholar.google.it/citations?hl=it&pli=1&user=lyklmT8AAAAJ> | **ResearchGate:**

<https://www.researchgate.net/profile/Polychronis-Kolokoussis> |

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ABOUT ME

I am a research collaborator and a member of the teaching staff of the Remote Sensing Laboratory, School of Rural, Surveying and Geoinformatics Engineering, NTUA. Since 2021 I have a tight collaboration with Geosystems Hellas S.A., and during the period 2023 to 2025 I am a Visiting Researcher at GEOLab, Politecnico di Milano. My research interests include: Multispectral, hyperspectral, thermal, SAR, LiDAR etc sensors and (satellite, aerial, ground and underwater) platforms/systems. - Acquisition and processing of remote sensing imagery emphasizing in methods and techniques for various applications like change detection, modelling of phenomena, risk assessment of natural hazards and the protection of the natural environment. - Development of algorithms and methods for the analysis of remote sensing imagery as well as their integration with GIS. I have special interest and experience on acquisition and processing of multispectral/hyperspectral and thermal remote sensing imagery, as well as AI image analysis techniques including object-based image analysis, machine/ deep learning and foundation models. Also experienced in cloud computing and the development of WebGIS applications.

WORK EXPERIENCE

01/10/2023 – CURRENT Milano, Italy

VISITING FACULTY POLITECNICO DI MILANO, GEOMATICS AND EARTH OBSERVATION LABORATORY (GEOLAB)

15/03/2023 – CURRENT Athens, Greece

PROJECT MANAGER GEOSYSTEMS HELLAS S.A.

2002 – CURRENT

TEACHING STAFF NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA), LAB OF REMOTE SENSING (RSLAB)

01/01/2021 – 31/12/2022 Athens, Greece

INDEPENDENT EXPERT WORKING ON DOWNSTREAM SPACE APPLICATIONS GEOSYSTEMS HELLAS S.A.

1998 – 2002

COLLABORATOR KTIMATOLOGIO S.A. - EUROPEAN PROGRAMMES DIVISION

Participation as a collaborator in the European Programmes run by the Division

1998 – 2002

STAFF AND RESEARCH COLLABORATOR NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA), LAB OF REMOTE SENSING (RSLAB)

1993 – CURRENT

FREELANCER SURVEYING ENGINEER

● **EDUCATION AND TRAINING**

2008
DOCTOR ENGINEER National Technical University of Athens, Remote Sensing Laboratory

Thesis Development of an Integrated System of Hyperspectral and Thermal Remote Sensing Sensors for the Detection of Coastal and Submarine Springs

1993
RURAL & SURVEYING ENGINEER School of Rural and Surveying Engineering of the National Technical University of Athens (NTUA)

Field of study Remote Sensing | **Final grade** 7.64/10 |
Thesis Evaluation of the Capabilities of Digital Photointerpretation Keys (diploma thesis degree: 10/10)

● **LANGUAGE SKILLS**

Mother tongue(s): **GREEK**
Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **DIGITAL SKILLS**

Operating Systems

Unix-Linux/X-windows | Windows/DOS systems | MacOS

Programming

C | Python | Fortran | Basic | Bash/Cshell scripts | R

Remote Sensing Software

ESA SNAP | eCognition | ENVI | ERDAS | SAGA GIS | ERMapper | PCI Geomatica | Idrisi | Geoserver | BricksCAD | ArcGIS | GRASS | ORFEO toolbox | QGIS | AutoCAD | ArcIMS | ArcServer | ArchiCAD | Image Web Server

Web-based

network administration | creation of Web Pages and Web Servers

Remote sensing related technical skills

Development of prototype constructions for close-range hyperspectral image acquisitions. | Organization and realization of hyperspectral in situ measurements. | Acquisition/preprocessing of aerial hyperspectral and thermal imagery | Acquisition/preprocessing of drone multispectral imagery.

Other technical skills

Long experience in construction and maintenance of electronic/electrical and mechanical equipment

● **PUBLICATIONS**

(a) In scientific journals:

Bernd Resch, Polychronis Kolokoussis, David Hanny, Maria Antonia Brovelli, Maged N. Kamel Boulos, “The Generative Revolution: AI Foundation Models in Geospatial Health-Applications, Challenges and Future Research”, International Journal of Health Geographics 24, March 2025 (in press), DOI: 10.1186/s12942-025-00391-0

Polychronis Kolokoussis, Lan Mu, Maged N Kamel Boulos, 2025. "The Generative Revolution: A Brief Introduction", International Journal of Health Geographics 24, March 2025 (in press), DOI: 10.1186/s12942-025-00392-z

Theocharidis, C.; Eliades, M.; Kolokoussis, P.; Miltiadou, M.; Danezis, C.; Gitas, I.; Kontoes, C.; Hadjimitsis, D., 2025. "Exploring Sentinel-1 Radar Polarisation and Landsat Series Data to Detect Forest Disturbance from Dust Events: A Case Study of the Paphos Forest in Cyprus". MDPI Remote Sensing, 2025, 17, 876. <https://doi.org/10.3390/rs17050876>

Mohanad Diab, Polychronis Kolokoussis and Maria Antonia Brovelli, 2025. "Optimizing zero-shot text-based segmentation of remote sensing imagery using SAM and Grounding DINO", Artificial Intelligence in Geosciences, Artificial Intelligence in Geosciences, 6(11):100105, DOI: 10.1016/j.aiig.2025.100105 - also published as EurekAlert newsletter, "Zero-shot AI for remote sensing: A new pipeline for automated image segmentation", <https://www.eurekalert.org/news-releases/1074620>

Papakonstantinou A., Moustakas A., Kolokoussis P., Papageorgiou D., de Vries R., Topouzelis K., 2023, "Airborne Spectral Reflectance Dataset of Submerged Plastic Targets in a Coastal Environment", MDPI Data, 8, 19. <https://doi.org/10.3390/data8010019>

Kremezi M., Kristollari V., Karathanassi V., Topouzelis K., Kolokoussis P., Taggio N., Aiello A., Ceriola G., Barbone E. and Corradi P., 2022. "Increasing the Sentinel-2 potential for marine plastic litter monitoring through image fusion techniques", Marine Pollution Bulletin, Vol 182, 113974, <https://doi.org/10.1016/j.marpolbul.2022.113974>

Taggio N., Aiello A., Ceriola G., Kremezi M., Kristollari V., Kolokoussis P., Karathanassi V., Topouzelis K., Barbone E., Corradi P., 2022, "Combination of Machine Learning Algorithms for Marine Plastic Litter Detection on Hyperspectral PRISMA Data", MDPI Remote Sensing, 14(15), 3606; <https://doi.org/10.3390/rs14153606>

Miltiadou M., Karathanassi V., Agapiou a., Theocharidis C., Kolokoussis P., Danezis C., 2022, "A selection of experiments for understanding the strengths of time-series SAR data analysis for finding the drives causing phenological changes in Paphos forest, Cyprus", MDPI Remote Sensing, 14(15), 3581; <https://doi.org/10.3390/rs14153581>

Andronis V., Karathanassi V., Tsalapati V., Kolokoussis P., Miltiadou M., Danezis C., 2022. "Time Series Analysis of Landsat Data for Investigating the Relationship between Land Surface Temperature and Forest Changes in Paphos Forest, Cyprus", MDPI Remote Sensing, 14, 1010. <https://doi.org/10.3390/rs14041010>

Kremezi M., Kristollari V., Karathanassi V., Topouzelis K., Kolokoussis P., Taggio N., Aiello A., Ceriola G., Barbone E. and Corradi P., 2021. "Pansharpening PRISMA Data for Marine Plastic Litter Detection Using Plastic Indexes", IEEE Access, Vol. 9, pp. 61955-61971, DOI: 10.1109/ACCESS.2021.3073903

Kopsachilis V., Siciliani L., Polignano M., Kolokoussis P., Vaitis M., De Gemmis M. and Topouzelis K. (2021). "Semantically-Aware Retrieval of Oceanographic Phenomena Annotated on Satellite Images", Information 2021, 12(8), 321, MDPI, <https://doi.org/10.3390/info12080321>

Giannakopoulou, S., Kolokoussis, P., Arvanitis, A. 2020. "Teritorial disparities between mountains and lowlands in Greece in the context of post-2020 Cohesion Policy", Geographia Polonica Vol. 93 No. 3 (2020), IGI-PZ PAN, DOI: 10.7163/GPol.0182

(b) In proceedings of conferences and workshops with peer review

Georgios P. Georgalas, Polychronis Kolokoussis, Sofia Laskari and Konstantinos Soukis, 2025. "Automatic Detection and Extraction of Geological Lineaments on Amorgos Island Using Satellite Data and Open-Source Software", 17th International Congress of the Geological Society of Greece (GSG2025), 28-31 May 2025, Mytilene, Lesvos, Greece (accepted).

Mohanad Diab, Polychronis Kolokoussis, Maria Antonia Brovelli, 2025. "LangRS: Optimizing Zero-Shot Semantic Segmentation of Remote Sensing Imagery", Oral presentation at the "ESA-NASA International Workshop on AI Foundation Model for EO", 5-7 May 2025, Frascati, Italy (accepted).

Alexandros Voukenas, Vassilis Andronis, Alexandros Nikitas, Pol Kolokousis and Efthimios Bakogiannis, 2025. "The effect of building heights on the relationship of NDVI and GVI: A case study in Athens, Greece", IEEE Joint Urban Remote Sensing Event (JURSE2025), 4-7 May 2025, Gammarth-Tunis, Tunisia (accepted).

George Giannopoulos, Pelagia Koutsantoni, Vassilia Karathanassi, Stella Demesticha, George Apeitos, Anna Demetriou, Paschalina Giatsiatsou, Pol Kolokoussis and John Gasparatos, 2025. "Hyperspectral Image Acquisitions for Monitoring Underwater Cultural Heritage", 4th International TMM_CH Conference, April 07-09, 2025, Athens, Greece (accepted).

Göktuğ Yaşar Çukurlu, Nusret Demir, Pol Kolokoussis, Fulya (Aydın) Kandemir and Ecmel Erilat, 2025. "Investigation of InSAR Coherence Data and Frequency Ratio for Analyzing Forest Fires: A Case Study of Yamanlar/Izmir" at the ISPRS EARSeL & DGPF Joint Istanbul Workshop, held at Yıldız Technical University, 29-31 January 2025.

Matej Žgela, Alberto Vavassori, Polychronis Kolokoussis, Maria Antonia Brovelli, 2024. "Assessing and validating spectral unmixing of hyperspectral PRISMA imagery in Milano with implications for urban climate", 75th International Astronautical Congress (IAC), Milan, Italy, 14-18 October 2024, DOI: 10.52202/078362-0065

Kolokoussis P., Skamantzari M., Tapinaki S., Karathanassi V., Georgopoulos A., 2021. "3D and Hyperspectral Data Integration for Assessing Material Degradation in Medieval Masonry Heritage Buildings", XXIV ISPRS Congress, Commission II, WGII/8, 4-10 July 2021, Nice, France

Konstantinidou E.E., Kolokoussis P., Topouzelis K., Moutzouris-Sidiris I., 2019. "An open source approach for oil spill detection using Sentinel-1 SAR images", 7th International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2019); 1117412 (2019) <https://doi.org/10.1117/12.2539256>

(c) In proceedings of conferences and workshops with abstract review:

E. Marinou, P. Kolokoussis, C. Kontopoulos, V. Charalampopoulou, 2024. "Empowering Citizen-Driven Climate Resilience and Inclusive Governance for a Sustainable Blue Economy in Mediterranean Coastal Regions", EGU 18th PLINIUS Conference on Mediterranean Risks, 30 September-3 October 2024, Chania, Greece, <https://meetingorganizer.copernicus.org/Plinius18/Plinius18-47.html>

V. Charalampopoulou, E. Marinou, C. Kontopoulos, P. Kolokoussis, 2024. "Utilizing Copernicus Satellite Imagery Open Data Infrastructures for User-driven applications and Tools for Climate-Informed Maritime Spatial Planning", EGU 18th PLINIUS Conference on Mediterranean Risks, 30 September-3 October 2024, Chania, Greece, <https://meetingorganizer.copernicus.org/EGU24/EGU24-2538.html>

Cukurlu G.Y., Demir N., Kolokoussis P., 2024. "Determination of Forest Fire Damage Through Coherence Values from InSAR Data", ISAG 2024, Wroclaw, Poland, 9-10 May 2024.

Karathanassi, V., Karamvasis, K., Kristolari, V., Kolokoussis, P., Skamantzari, M., and Georgopoulos, A., 2024. "Remote sensing techniques for monitoring cultural heritage sites", EGU General Assembly 2024, Vienna, Austria, 14-19 Apr 2024, EGU24-10181, <https://doi.org/10.5194/egusphere-egu24-10181>

Papakosmas T., Kolokoussis P., Karantzalos K., 2022, "Quantification of ecological light pollution in the Region of Epirus with remote sensing and GIS methods", 10th Interdisciplinary-Interuniversity Conference of the NTUA, 22-24 September 2022, Metsovon, Greece.

Andronis V., Kolokoussis P., Vassili-Vassiliou K., Karathanassi V., 2022, "Penalized Variable Selection in Bayesian Spectral Spatial Species Separation", 10th Interdisciplinary-Interuniversity Conference of the NTUA, 22-24 September 2022, Metsovon, Greece.

(d) Other publications/posters/presentations:

Fatemeh Soleimaniansomarin, Polychronis Kolokoussis, Maria Antonia Brovelli, 2025. "Adapting a Pre-trained Foundation Model for Secret Runway Detection in Sentinel-2 Satellite Imagery: A Performance Evaluation", Poster at the "ESA-NASA International Workshop on AI Foundation Model for EO", 5-7 May 2025, Frascati, Italy (accepted).

Kolokoussis P., Kontopoulos C., Voskopoulos G., Charalampopoulou V., 2024. "Selene & Helios - The first Greek Earth Observation Cubesats are in preparation phase", Poster presentation at RSCy2024, Tenth International Conference on Remote Sensing and Geoinformation of Environment 8-9 April, 2024, Cyprus.

Kremezi M., Kristollari V., Karathanassi V., Kolokoussis P., 2022, "Enhancing PRISMA and Sentinel 2 Capabilities for Marine Plastic Litter Detection Using Image Fusion Techniques, Spectral Signature Unmixing and Spectral Indexes", 41st EARSeL Symposium 2022, 13-16 September, Paphos, Cyprus.

(e) In books:

Stratis P., Kolokoussis P. Argialas D., "Recognition of Organic Cultivation Practises Using Remote Sensing Methods and Techniques", "Measurement routes - Honorary volume dedicated to the memory of Evangelia Lamprou, Professor of the NTUA", NTUA, 2021.

● NETWORKS AND MEMBERSHIPS

1993 – CURRENT

Member of Technical Chamber of Greece

1993 – CURRENT

Member of the Hellenic Association of Rural and Surveying Engineers

● DRIVING LICENCE

Driving Licence: B

● CONFERENCES AND SEMINARS

14/10/2024 – 18/10/2024 Milan, Italy

75th International Astronautical Congress (IAC)

07/07/2024 – 12/07/2024 Athens, Greece

IGARSS 2024, IEEE International Geoscience and Remote Sensing Symposium

08/04/2024 – 09/04/2024 Pafos, Cyprus

RSCy2024, Tenth International Conference on Remote Sensing and Geoinformation of Environment

31/10/2023 – 02/11/2023 Athens, Greece

WHISPERS 2023, 13th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing

05/06/2023 – 06/06/2023 ESA – ESTEC, Holland

Workshops for Greek CubeSat Projects of the Greek National Telecom Satellite Project

05/07/2021 – 09/07/2021

2021 Digital Event of the XXIV ISPRS Congress.

07/06/2001 – 10/06/2021 Metsovo, Greece

3rd Interdisciplinary-Interuniversity Conference of the NTUA "Integrated Development Of Mountainous Regions. Theory and Practice"

19/05/2021 – 21/05/2021

«University of the Aegean Research & Innovation days – Dimitris Eduard Gardikis».

19/11/2020

Dissemination workshop of project MARRE: "System for Environmental Monitoring of the Greek Seas with the Use of Satellite Remote Sensing Data and In-situ measurements"

● PROJECTS

2024 – 2027

THEIA: Enhancing Copernicus Security Services - EU governmental crisis management hub for forced population displacement

Horizon Research and Innovation Program Horizon Europe (HORIZON-CL4-2024-SPACE-01), Grant Agreement: 101190051, Duration: 2024-2027, 30 months.

2024 – 2026

OCEANIDS: User-driven applications and tools for Climate-Informed Maritime Spatial Planning and integrated seascape management, towards a resilient & inclusive Blue Economy

Horizon Europe (2021-2027) Research and Innovation Programme, Grant Agreement: 101112919, Duration: 2024-2026, 32 months.

2024 – 2026

Sat4Forest: Greek National Satellite Space Project: Axis 3, Forest Monitoring Service

ESA Contract No. 4000145362/24/NL/VA, Duration: 2024-2026 , 24 months.

2024 – 2026

Sat4GAIA: Greek National Satellite Space Project: Axis 3, Land Monitoring Service

ESA Contract No. 4000145364/24/NL/Ffi, Duration: 2024-2026, 24 months.

2023 – 2026

EO-PERSIST: A Cloud-Based Remote Sensing Data System For Promoting Research And Socioeconomic Studies In Arctic Environments.

HORIZON-MSCA-2021-SE-01-01, Grant Agreement number: 101086386, Partners: Harokopio University of Athens, National Technical University of Athens, CloudEO Ellas I.K.E., PlanetGIS SKY SRL, Universitatea Din Bucuresti, YetItMoves SRL, CloudFerro, CloudEO AG, Ilmatieteen Laitos FMI, Lunds Universitet

2023 – 2026

THETIDA: Technologies and methods for improved resilience and sustainable preservation of underwater and coastal cultural heritage to cope with climate change, natural hazards and environmental pollution.

HORIZON-CL2-2022-HERITAGE-01-08, Grant Agreement number: 101095253, Partners: Institute of Communication and Computer Systems, EdgeLab s.r.l., Eindhoven University of Technology, University of Padova, National Technical University of Athens, Universidade Do Algarve, Norwegian Institute for Cultural Heritage Research, SignalGeneriX Ltd, ResilienceGuard, MOOI Noord-Holland, Cyprus Marine and Maritime Institute, Centro de Ciência Viva do Algarve, IANTD s.r.l., Association Européenne EURISY, Ephorate of Antiquities of Cyclades, University of Cyprus, Marina Diving di Corrado Ambrosi

2023 – 2025

HELLENIC SPACE DAWN - HELIOS & SELENE: Greek CubeSats in-orbit validation projects

ESA Contract No. 4000140681/23/NL/ND, Partners: EMTech Space PC, ISD SA, HERON Engineering, LEO Space Photonics, Geosystems Hellas SA, Aristotelian University of Thessaloniki, National and Kapodistrian University of Athens, Hellenic Navy

2023 – 2025

HARMONIA: Development of a Support System for Improved Resilience and Sustainable Urban areas to cope with Climate Change and Extreme Events based on GEOSS and Advanced Modelling Tools

Horizon 2020 Research and Innovation Programme, Grant Agreement: 101003517, Duration: 2021-2025, 44 months.

2023 – 2025

TRIQUETRA: Toolbox for Assessing and Minimizing Climate Change Risks and Natural Hazards Threatening Cultural Heritage

EU Horizon Europe Research and Innovation programme (HORIZON-CL2-2022-HERITAGE-01), Grant Agreement: 101094818, 2023-2025, Duration 36 months.

2023 – 2025

EURMARS: An Advanced Surveillance Platform to Improve the European Multi Authority Border Security Efficiency And Cooperation

Horizon Research and Innovation Program Horizon Europe (HORIZON-CL3-2021-BM-01-01), Grant Agreement: 101073985, Duration: 2023-2025, 36 months.

2023 – 2024

SPOTTED: Spatio-Temporal Fusion and Artificial Intelligence for Debris Detection.

Funded by ESA/Planetek Italia S.R.L., Partners: by Planetek Italia SRL and the National Technical University of Athens. ESA contract: 4000141234/23/NL/GLC/ov.

2023 – 2024

CO-PROTECT: Cluster of Interoperable and Holistic Civil Protection Systems

Competitiveness, Entrepreneurship, and Innovation (EPAN EK 2014-2020), Grant agreement No: Γ2CL-0363842. Partners: Satways Ltd, Draxis Environmental SA, GAP Analysis SA, Future Intelligence Ltd, Exus Software, Consortis, Geosystems Hellas, Inforest Research, Prisma Electronics, Space Hellas SA, Omikron Environmental Consultants SA, TotalView Ltd, Aegean Solutions, Telenavis SA, Europort SA, Weather & Marine Engineering Technologies PC, Altus LSA SA, Grid Engineering SA, Redi Engineering Solutions, European Dynamics SA.

2023 – 2024

MAGINet: Geospatial Information Networking Techniques for Maritime Awareness Services

ESA AO 1-11190, Duration: 2023-2024, 18 months.

2022 – 2023

AQUASAFE: Towards a Precision Aquaculture Geoinformation System

University of the Aegean (Department of Marine Sciences), Geospatial Enabling Technologies, Hellenic Center for Marine Research (Institute of Oceanography), Plagton SA. Funded under the call Research>Create-Innovate.

2020 – 2022

HYPERION: Development of a Decision Support System for Improved Resilience & Sustainable Reconstruction of historic areas to cope with Climate Change & Extreme Events based on Novel Sensors and Modelling Tools

Institute of Communication and Computer Systems, Ilmatieteen Laitos, Resilience Guard GmbH, Oslomet-Storbyuniversitetet, National Technical University of Athens, Risa Sicherheitsanalysen GmbH, Università Degli Studi di Padova, Universidad de Granada, Aristotelian University of Thessaloniki, Cy.R.I.C Cyprus Research and Innovation Center Ltd, Università Iuav di Venezia, Vestfold Fylkeskommune, Comune di Venezia, Municipality of Rhodes, Ephorate of Antiquities of the Dodecanese, Ayuntamiento de Granada, Intercultural Euro Mediterranean Center for UNESCO, Red Spa, H2020-LC-CLA-2018-2019-2020/H2020-LC-CLA-2018-2, Grant Agreement number: 821054.

2020 – 2021

ASTARTE: Analysis of SAR and Thermal satellite time-series data for understanding the long-term impact of land surface Temperature changes on forests project

National Technical University of Athens, Cyprus University of Technology, EXCELLENCE/0918/0341 (the Project is co-financed by the European Regional Development Fund and the Republic of Cyprus through the Research Promotion Foundation).

2020 – 2021

REACT: crowdsourcing, copernicus and hyperspectral Satellite data for marine litter detection, quantification and tracking

Planetek Italia S.R.L., National Technical University of Athens, Agenzia Regionale per la Prevenzione e la Protezione dell'Ambiente - Puglia, ESA contract no. 4000131235/20/NL/GLC "OSIP Remote Sensing for Marine Litter-Early Technology Development Scheme"

2019 – 2021

MARRE: System for Environmental Monitoring of the Greek Seas with the Use of Satellite Remote Sensing Data and In-situ measurements

Geospatial Enabling Technologies, Hellenic Centre for Marine Research, Univeristy of the Aegean – Marine Remote Sensing Group, "Competitiveness, Entrepreneurship & Innovation 2014-2020"