# Curriculum Vitae


## Dr. EVANGELOS ALEVIZOS

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Languages:

- Greek (mother language)
- English (Proficient)
- German (Basic)

## EDUCATION

2013 – 2017: **PhD candidate** at the Faculty of Mathematics and Natural Sciences (Christian Albrechts University of Kiel, Germany), Doctoral researcher at the Deep Sea monitoring Group, Geomar Helmholtz Center of Ocean Research, Kiel
PhD thesis: *Examination of the spatial resolution and discrimination capability of various acoustic seafloor classification techniques based on MBES backscatter data*
*(PhD degree with distinction: magna cum laude)*

2008-2009: **MRes Marine Geology and Geophysics**, School of Ocean and Earth Science, University of Southampton, UK, www.soton.ac.uk/soes
Dissertation: *Late Quternary reconstruction of the West Solent Strait and evaluation of its archaeological potential.*

2002-2008: **BSc Marine Science**, Department of Marine Sciences, University of the Aegean, Greece www.mar.aegean.gr
Dissertation: *Contribution to the study of syn-sedimentary tectonics in North Evoikos Gulf based on lithoseismic data.*

## AREAS OF EXPERTICE

Geo-Informatics, Image classification methodologies, Geo-statistical analysis, Object-Based Image Analysis, Predictive mapping and machine learning, Acoustic stratigraphy, Marine geology

## IT KNOWLEDGE

Programming languages: Matlab
Geographic: ArcGIS, SAGA GIS, QGIS, Map Comparison Kit, LAStools
Acoustic Data Processing: Fledermaus, MBsystems, Sonar Pro, SonarWiz-MAP, IXsea Deplh
Image Processing / Photogrammetry: e-Cognition, ImageJ, ERDAS Imagine, Visual SfM, Regard3D, CloudCompare
Graphics: Adobe Photoshop/Premiere/Illustrator
General: Microsoft Office

## RESEARCH EXPERIENCE

- **Post-doctoral researcher** at the National Oceanography Centre, Southampton, 2019-2020: Seafloor and Habitat Mapping Group, Image classification applications and machine learning using hydro-acoustic data.
- **Post-doctoral researcher** at the Laboratory of Geophysical - Satellite Remote Sensing & Archaeo-environment, Institute of Mediterranean Studies (IMS-FORTH, Crete, Greece), 2018 – 2019, Processing and interpretation of satellite imagery for geo-archaeology applications. Aerial imagery acquisition with UAV platform.
- **Doctoral researcher** at the Deep Sea Monitoring Group, Geomar Helmholtz Center of Ocean Research, Kiel 2013 – 2017.
- **R&D scientist** (part-time), www.aktografia.gr , 2011–2013, Development of UAV platforms for coastal zone mapping, UAV survey planning and aerial imagery pre-processing.
- **Research assistant, Marine Geophysics: Sector of Marine Geology, Institute of Oceanography, H.C.M.R.,** www.hcmr.gr **,** 2009–2010. Processing and interpretation of sub-bottom data.

## INDUSTRIAL EXPERIENCE

- **Geophysicist**, EGSi (www.egssurvey.com Bordon, UK), 2012-2013. Acquisition, processing and interpretation of marine geophysical data for offshore/inshore construction projects.
- **GIS Assistant**, **Hellenic Navy Hydrographic Service,** www.hnhs.gr **Directorate of Oceanography,** 2011-2012, for the fulfilment of the obligatory national service. Extraction, conversion and integration of geological data.
- **Subcontractor, Marine geologist/geophysicist**, 2010-2011, Company: Akti Engineering ltd. (www.aktieng.gr), project name: *ZORCO 2010, Libya. Sub-bottom Profiler data processing and interpretation, geological interpretation, mapping of sub-bottom layers*.

## FIELDWORK OPERATIONS EXPERIENCE

- Low altitude aerial imaging using various types of Unmanned Aerial Platforms (tethered, remote controlled, autonomous). Preparation of flight plan and preliminary processing of data.
- On shore/land measurements using total station and D-GPS.

## AWARDS

- Seal of Excellence for the project proposal with title: ASSESSMENT OF LITTORAL SEAFLOOR BENTHIC DIVERSITY BY MEANS OF UAV HYPER-SPECTRAL MAPPING, Submitted under the Horizon 2020's Marie Skłodowska-Curie actions call H2020-MSCA-IF-2017 of 14 September 2017, (Project not funded due to budget limitations)

- Winner of student project awards by Innomar (2015) Project title: Acoustic classification of fine-scale sediment variability and interconnection with benthic habitats of the Eckernförde Bay, Kiel, http://www.innomar.com/seabed-acoustics-2015.php

## LIST OF PUBLICATIONS

*Papers (Journals & Proceedings)*

1. Alevizos E., Greinert J., 2018, The Hyper-Angular Cube Concept for Improving the spatial and acoustic resolution of MBES backscatter Angular Response Analysis, MDPI Geosciences, 8, 12, 446, doi:10.3390/geosciences8120446

2. Snellen M., Gaida T. C., Koop L., **Alevizos E.**, Simons D. G., Performance of Multibeam Echosounder Backscatter-Based Classification for Monitoring Sediment Distributions Using Multitemporal Large-Scale Ocean Data Sets, in *IEEE Journal of Oceanic Engineering*, vol. 44, no. 1,pp.142-155,Jan.2019. doi: 10.1109/JOE.2018.2791878

3. Gazis, I.-Z., Schoening, T., **Alevizos, E**., and Greinert, J.: Quantitative mapping and predictive modeling of Mn nodules' distribution from hydroacoustic and optical AUV data linked by random forests machine learning, Biogeosciences, 15, 7347-7377, https://doi.org/10.5194/bg-15-7347-2018

4. Alevizos, E., Schoening, T., Koeser, K., Snellen, M., and Greinert, J.: Quantification of the fine-scale distribution of Mn-nodules: insights from AUV multi-beam and optical imagery data fusion, Biogeosciences Discuss., https://doi.org/10.5194/bg-2018-60 , in review, 2018

5. Peukert, A., Schoening, T., **Alevizos, E.**, Köser, K., Kwasnitschka, T., and Greinert, J.: Understanding Mn-nodule distribution and evaluation of related deep-sea mining impacts using AUV-based hydroacoustic and optical data, Biogeosciences, 15, 2525–2549, https://doi.org/10.5194/bg-15-2525-2018

6. Alevizos E., Snellen M., Simons D.G., Siemes K., Greinert J., 2017, Multi-angle backscatter classification and sub-bottom profiling for improved seafloor characterization, Marine Geophysical Research , Special Issue "**Seafloor backscatter from swath echosounders: technology and applications**", pp.1-18, https://doi.org/10.1007/s11001-017-9325-4

7. Alevizos E., Snellen M., Simons D. G. , Siemes K., Greinert J., Acoustic discrimination of relatively homogeneous fine sediments using Bayesian classification on MBES data, Marine Geology, Volume 370, 1 December 2015, Pages 31-42, ISSN 0025-3227, http://dx.doi.org/10.1016/j.margeo.2015.10.007

8. Alevizos E., Acoustic classification of fine-scale sediment variability and interconnection with benthic habitats of the Eckernförde Bay Kiel, 7th workshop "Seabed Acoustics", Rostock, Germany, November 2015, https://www.innomar.com/wssa2015/wssa2015-11-Alevizos.pdf

9. Alevizos E., 2012, Low-altitude coastal aerial photogrammetry for high-resolution seabed imaging and habitat mapping of shallow areas, Advances in Geosciences, 32nd EARSeL Symposium, 21-24 May, Mykonos, Greece. http://www.earsel.org/symposia/2012-symposium-Mykonos/Proceedings/03-02_EARSeL-Symposium-2012.pdf

10. Alevizos E., 2009, Contribution to the study of syn-sedimentary tectonics in North Evoikos Gulf based on lithoseismic data, Proceedings of the 9th Panhellenic Symposium of Oceanography and Fisheries, 13-16 May, Patras, Greece. http://www.symposia.gr/wp-content/uploads/2015/01/9S2009_0009_Alevizos.pdf

*Technical Communication documents*

1. Alevizos E., 2019, How to create high resolution digital elevation models of terrestrial landscape using UAV imagery and open-source software, DOI: 10.13140/RG.2.2.25616.25603
2. Alevizos E., 2016, Introduction to SAGA GIS, DOI: 10.13140/RG.2.2.31487.87206

*Presentations & Posters*

1. Alevizos, E., Schoenning, T., Köser, K., Snellen, M., Greinert, 2017, Merging AUV-based multibeam and image data to map the small-scale heterogeneity of Mn-nodule distribution, GEOHAB 2017, Halifax, Canada, (oral presentation)

2. Alevizos E., 2017, An object-based seafloor classification tool using recognition of empirical angular backscatter signatures, GEOHAB 2017, Halifax, Canada, DOI: 10.13140/RG.2.2.10257.84324 (poster)

3. Alevizos E., Diesing M., Greinert J.,2016, Assessment of OBIA classification sensitivity to various selections of thresholds regarding the explanatory variables, GEOHAB 2016, Winchester, UK. (oral presentation)

4. Alevizos E., Siemes K., Janmaat J., Snellen M., D.G. Simons, Greinert J., 2016, Geostatistical and multivariate modeling for large scale quantitative mapping of seafloor sediments using sparse datasets GEOHAB 2016, Winchester, UK. DOI: 10.13140/RG.2.1.3509.6563 (poster)

5. Alevizos E., Mirjam Snellen, Dick Simons, Kerstin Siemes, Jens Greinert, Acoustic discrimination of relatively homogeneous fine sediments using Bayesian classification on MBES data, UACE2015, 21-25 June 2015, Chania, Greece. (Invited presentation)

6. Alevizos E., Greinert J., Meysman F., 2013, Using bathymetric derivatives for seabed feature detection and backscatter analysis of morphologically complex seabed, AGU Fall Meeting, San Fransisco, (poster)

7. Alevizos E., Papavasiliou G., 2013, Unmanned aerial vehicle remote sensing for high-resolution seabed imaging and habitat mapping of shallow areas, Remote sensing from small Unmanned Aerial Systems, Workshop of the RSPSoc's UAV Special Interest Group at the University of Worcester – 4th July, UK. (oral presentation)