Dr Milto Miltiadou

milto_miltiadou(at)hotmail(dot)com

Short Bio

Dr Milto Miltiadou is interested in laser scanning, forestry, remote sensing, computer graphics, image processing and machine learning. She studied her EngD (Doctorate in Engineering) at University of Bath, UK, with full studentship awarded by EPSRC and specialised on efficient accumulation, analysis and visualisation of full-waveform LiDAR data in a volumetric representation with applications to forestry. She further worked on projects that includes interpreting and/or co-registrating multi-band, radar, terrestrial laser scanning and hyperspectral data. She gained experience in both academia and industrial innovation through her placements at Airborne Research Facility of Plymouth Marine Laboratory (UK), Carbomap Ltd (UK), Planetek Hellas (GR) and Interpine Group Ltd (NZ). She further presented her research at many well-established international and national conferences and she was invited to give lectures about the interpretation of full-waveform LiDAR at the National Institute of Space Research (INPE), Brazil and University of Bari, Italy. Her performance has been acknowledged with multiple awards. Additionally, she has gained significant professional and transferable skills through extra-curricular activities, which include organising writing retreats and collecting feedback for school board meetings that she attended as a student representative.

Pages

users.ntua.gr/MiltoMiltiadou

github.com/Art-n-MathS

@DrMiltiadou, @_DASOS_

miltomiltiadou.blogspot.com/

Work Experience

02/2017-Now **Special Scientist - Researcher**
Cyprus University of Technology, Cyprus
"ASTARTE", RIF Excellence hubs, *Dec 2019-Nov 2021*:
Analysis of time-series radar and thermal satellite data for understanding the long-term impact of land surface temperature changes on Cypriot forests.
Roles include (1) project management, (2) supervision of image processing techniques to be applied, (3) automation of processing in python and OpenCV and (4) paper and proposal writing
"FOREST", RIF 2nd Opportunity for H2020 Marie Curie Individual Fellowship, *June 2018-May 2020*:
Analysis of full-waveform airborne laser scanning (LiDAR) data in C++:
- Multi-scale 3D windows and extraction of structural elements to train a classifier that detect dead standing trees
- Co-registration and fusion of LiDAR with satellite data for better prediction
- Processing laser waveforms for accounting occlusions before voxelisation
Orginse workshops for university students and the public audience
"SEO-DWARF", H2020 Research Innovation and Staff Exchange, *Feb 2017-May 2018*:
Research, implementation and automation of image processing techniques (e.g. edge detection) for deriving ocean metrics from satellite imagery
Seconded to Planetek Italia and Planetek Hellas, regular visits to NTUA

01/2016-03/2016 **Full-waveform LiDAR analyst**
Interpine Group Ltd, New Zealand
Industrial training on the user requirements, while developing software and tools for analysing data

09/2013-09/2016 **Research Engineer - EngD student**
Airborne Research Facility, Plymouth Marine Laboratory, UK
A three years placement was compulsory for the completion of the Doctor of Engineering program. A great opportunity to work with state-of-art data that university would not have been able to fund otherwise

11/2012-03/2013 **Casual Admin Assistant**
University of Bath, UK
Prepare papers for interviews and welcoming students during open days. Confidentiality is important while accessing students' databases

09/2010-07/2011 **Teaching Assistant**
Weston-Super-Mare Greek School, UK
Plan lessons, organise school events and teach small groups of students. Creativity and initiative are essential while working with children

10/09-12/09 **Lab Demonstrator**
University of Bristol, UK
Help first year students with their assignments on C Procedural Programming

Funding Received and Scholarships

12/2019-11/2021 **"ASTARTE"- EXCELLENCE/0918/034** scored 14.56/15
RESTART 2016-2020, Excellence hubs, Cyprus Research & Innovation Foundation

06/2018-05/2020 **"FOREST" - OPPORTUNITY/0916/MSCA/0005** scored 90.4/100
RESTART 2016-2020, 2nd Opportunity for Marie-Curie Individual Fellowships, Cyprus Research & Innovation Foundation

2012-2016 **Engineering and Physical Sciences Research Council (EPSRC) Studentship Funding Award**
Centre for Digital Entertainment (CDE), Doctorate Training Centre, UK
Funds four-year doctoral degree programme, including one year of preparation with taught units

2008-2011 **Scholarship for undergraduate studies**
Cyprus State Scholarship Foundation Awarded to students who scored excellent grades on their Lyceum Apolytirion

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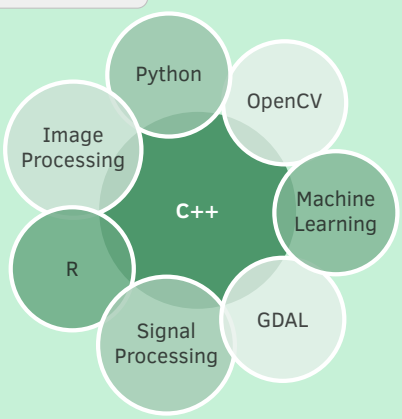
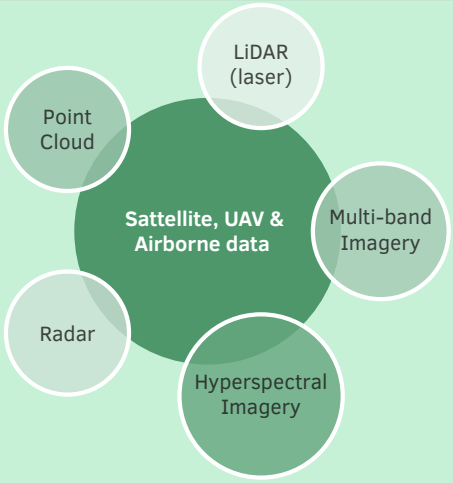
Skills

Programming



Interpretation of Remote Sensing data



Transferable

Languages

Greek (native) ●●●●○

English ●●●●●

Education

2012-2017 **Doctor of Engineering (EngD) in Efficient Accumulation, Analysis and Visualisation of Full-Waveform LiDAR with Applications to Forestry**
Department of Computer Science, University of Bath, UK
Airborne Research Facility, Plymouth Marine Laboratory, UK
Industrial Based Doctorate Degree with the department of Computer Science, University of Bath, UK and the Airborne Research Facility of Plymouth Marine Laboratory, UK
- Detection of dead standing Eucalypt trees in a native Australian forest; extracting structural features from 3D windows to characterise positive (dead trees) and negative (live trees) samples and train a classifer for detecting dead trees. Results were cross-validated with ground truth data.
- Alignment with hyperspectral images for generating tree coverage maps using Gaussian mixture model
- Polygonal meshes derived from laser data, efficient interpretation
- Implementation of the open source software DASOS. More info: miltomiltiadou. blogspot.gr/2015/03/las13vis.html

2011-2012 **MSc Computer Animation and Visual Effects**
Media School, Bournemouth University, UK
The course was dedicated into creating tools for animators (e.g. cloth simulation and 3D modeling).
Major Project: classification of 3D motion capture data for fall detection of elder people in their home environment
Showreel: https://www.youtube.com/watch?v=11ImtFBytZk

2008-2011 **BSc Computer Science**
Department of Computer Science, University of Bristol, UK
Individual Project: Geometrical Correspondence Tools for 3D noisy Facial Polymeshes – passed at 75% (First-Class Mark)
Option Units: Image Processing and Computer Vision, Artificial Intelligence, Computer Graphics, Animation Production

Awards

2016 **EDE and Ravenscroft Academic Prize for Exellence - Finalist**
University of Bath, UK
Selected as one of the five finalists for this prestigious prize that recognises the work of the best postgraduate researchers

2015 **Poster Award for Early Career Researchers**
Silvilaser Conference, France

2012 **American Ballroom and Latin Competitions' awards**
Competing at Beginner's Level and got 2nd place on Quickstep, 3rd place on Waltz, 3rd place on Cha-Cha at Southampton competition and 4th place on Quickstep and 5th place on Waltz in Bath competition, UK

2012 **Queens Anniversary Prizes**
Buckingham Palace, UK
Selected to represent Bournemouth University at the ceremony

2011 **Bristol Plus Award**
Career Service, University of Bristol, UK
Awarded to students who have gained significant professional and life skills through extra-curricular experiences

2008 **Edexcel High Achiever Award (joint)**
Fine Art GCE Advanced Level

2005-2008 **National Competitions in Mathematics, Physics and Art**
Gained one of the top 10 student's awards in Mathematics for four continuous years, two awards in Physics and one award at an EU national art competition

2005 **Junior Balkan Mathematical Olympiad**
Selected through 5 National Competitions to represent Cyprus

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Conferences Presentations

2019: Silvilaser, IUFRO, RSCy
2018: RSCy
2017: RSCy
2016: CGVC,ForestSAT
2015: Silvilaser, ISRSE
2014: RSPSoc

Interests

- Environmentalism
- Dancing
- Drawing and Painting
- Psychology

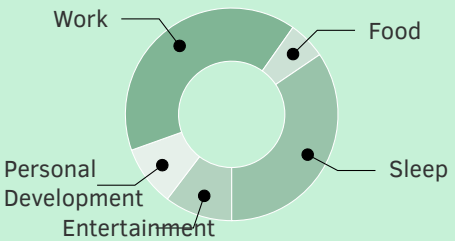
Memberships

Committee member of "Friends of the Earth (Cyprus)"

Active member of "300,000 trees in Limassol"

Founding member of "QGIS Cyprus"

My Day



Invited Lectures and Workshops

2020 — **Advancement of Tree Structure Observation Algorithms for Forest Monitoring using LiDAR technologies**
National Technical University of Athens, Athens, Greece

2018-2017 — **Efficient accumulation, analysis and visualisation of full-waveform LiDAR in a volumetric representation with applications to forestry**
National Technical University of Athens, Athens, Greece
University of Bari, Bari, Italy
Planetek Italia, Bari, Italy

2016 — **Exploration and Visualisation of full-waveform LiDAR Data for Forestry Applications**
National Institute For Space Research (INPE), San Jose dos Campos, Brazil

2016 — **Full day workshop on full-waveform LiDAR and the open source software DASOS**
Interpine Group Ltd, Rotorua, New Zealand

2015 — **The state-of-art research about full-waveform LiDAR data**
University of Bath, Bath, United Kingdom

Reviewing

2018 — **Joint Urban Remote Sensing Event (JURSE 2019)**
Vannes, France

Selected Publications

2020 — **Detecting dead standing Eucalypt trees from voxelised full-waveform LiDAR using 3D multi-scale windows for tackling height and size variations**
M. Miltiadou, A. Agapiou, S. Gonzalez Aracil, D. G. Hadjimitsis
Forests - Impact factor 2.221

2019 — **Open source software DASOS: efficient accumulation, analysis, and visualisation of full-waveform lidar**
M. Miltiadou; M. G. Grant; N. D. F. Campbell; M. Warren; D. Clewley; D. G. Hadjimitsis
SPIE Library, Proceedings Volume 11174, Seventh International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2019)

2018 — **Detection of dead standing Eucalyptus camaldulensis without tree delineation for managing biodiversity in native Australian forest**
M. Miltiadou, N.D.F. Campbell, S. Gonzalez Aracil, T. Brown, M. G. Grant
International Journal of Applied Earth Observation and Geoinformation - Impact factor 4.846

2015 — **Alignment of hyperspectral imagery and full-waveform LIDAR data for visualisation and classification purposes**
M. Miltiadou, M. Warren, M. Grant, M. Brown
The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences

Volunteering

2019-present — **Supporting Environmental NGOs**
Active volunteer of "300,000 trees in Limassol" and committee member of "Friends of the Earth (Cyprus)"

2014-2016 — **Writing Retreat Organiser**
Interviewing potential speakers, organising meals and entertainment, booking venue

2011-2014 — **Student Representative**
Collecting feedback for improving student experience and having a voice at university board meetings