

AIKATERINI MARIA OIKONOMOU

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EDUCATION

Democritus University of Thrace, Xanthi, Greece

April 2021 - June 2025

Ph.D.

Advisor: Prof. Antonios Gasteratos

Department of Production and Management Engineering.

PhD research topic: Spiking Neural Networks for Perception and Control in Human Assistive Robotic Systems.

National Technical University of Athens, Greece

September 2018 - February 2021

Master in Automation Systems.

Department of Electrical and Computer Engineering & Mechanical Engineering.

Direction: Automatic Control Systems and Robotics.

Diploma thesis: Semantic Segmentation for ADL in Assistive Robotics and Comparison of RGB/RGB-D Input and Single/Multiple Viewpoints. (University of Bremen, Germany)

Advisors: Prof. Axel Graeser (University of Bremen) & Prof. Kostas J. Kyriakopoulos (NTUA)

University of Patras, Greece

September 2013 - September 2018

Bachelor in Physics

Advisor: Prof. Georgios Economou

Direction : Electronics, Computers and Signal Processing.

Diploma thesis: EEG signal classification evoked from music stimuli.

WORK EXPERIENCE

Democritus University of Thrace, Xanthi, Greece

December 2023 - June 2025

Collaborative Research

Project: MASTERMINE - European Mining in the Green and Digital Age

Subject: Development of semantic mapping methods in aerial robotic systems, target object detection and creation of a data-signal transmission network through the aerial robotic systems.

Democritus University of Thrace, Xanthi, Greece

October 2023 - November 2023

Collaborative Research

Project: MIDRES - Autonomous Robotic Unmanned Aerial Vehicle System for Navigating Inaccessible Indoor Spaces and People Detection

Subject: Development of a human detection algorithm for indoor UAV navigation.

Democritus University of Thrace, Xanthi, Greece

June 2021 - September 2023

Collaborative Research

Project: Study, Design, Development, and Implementation of a Holistic System for Enhancing the Quality of Life and Activity of Elderly Individuals (ASPiDA)

Subject: Extension of the functionality of monitoring sensors and robotic platform. Participation in the development of an integrated decision-making and management system for the smart interconnected home for elderly living: an automated robotic emergency response and fall assistance tool, a customized musculoskeletal strengthening tool to improve the kinematics of the elderly, and monthly reports on the progress of optimal decision-making and action. Participation in the completion, verification, exploitation, and dissemination of results: the original holistic ASPiDA solution.

National Center For Scientific Research "Demokritos" January 2021 - March 2021
Collaborative Research *Advisor: Dr. Stasinios Konstantopoulos*
 Project: ExtremeEarth - From Copernicus Big Data to Extreme Earth Analytics
 Subject: Data analysis and web application development using Flask & Django.

National Center For Scientific Research "Demokritos" July 2020 - December 2020
Collaborative Research *Advisor: Dr. Stasinios Konstantopoulos*
 Project: iRTA - intelligent robotic high-precision treatment application in rough terrain vineyards.
 Subject: Navigation algorithm development for an indoor 4x4 robotic platform ("Mir Robot"). Evaluation in simulation environments. Docker containers deployment for cross-compilation.

University of Bremen October 2019 - April 2020
Master thesis *Advisor: Prof. Dr.-Ing. Axel Graeser*
 Subject : Semantic Segmentation for Activities of Daily Life in Assistive Robotics and Comparison of RGB/RGB-D Input and Single/Multiple Viewpoints.

National Center For Scientific Research "Demokritos", Athens May 2019 - September 2019
Collaborative Research *Advisor: Dr. Stasinios Konstantopoulos*
 Subject : 3D printable gears design in Blender for a 4x4 robotic platform and inclined terrain traversability testing through autonomous robot experimentation.

National Center For Scientific Research "Demokritos", Athens May 2018 - September 2018
Working Student *Advisor: Dr. Stasinios Konstantopoulos*
 Subject : Implementation and evaluation of human tracking algorithms using laserscans and RGB images.

National Center For Scientific Research "Demokritos", Athens September 2017 - Dec. 2017
Working Student *Advisor: Dr. Stasinios Konstantopoulos*
 Subject : Outdoor world design in Blender for robot simulation purposes. 3D mapping of Demokritos campus using OctoMap framework for autonomous robot navigation.

National Center For Scientific Research "Demokritos", Athens July 2017 - September 2017
Internship *Advisor: Dr. Stasinios Konstantopoulos*
 Subject : Implementation and evaluation of a visual odometry algorithm. Traversability map design for an outdoor 4x4 robotic platform.

TECHNICAL STRENGTHS

OS	Linux, Windows, MacOS
Languages	Python, Matlab, Latex
Web Applications	Flask
Software & Tools	ROS, ROS2, Gazebo, MoveIt, Github, Gitlab, Bitbucket, Meshlab, Blender Jupyter Notebook, DSpace, Docker, Travis CI
Libraries	OpenCV, PointCloud, Keras, Tensorflow, PyTorch

LANGUAGE SKILLS

Greek (Native speaker)
 English (Proficiency , Michigan)

French (Delf B2)

SCIENTIFIC PAPERS

Google Scholar profile : [Katerina M. Oikonomou](#).