DR. GIORGOS A. DEMETRIOU, PhD

Associate Professor
Director, Robotics & Automated Systems Laboratory (RAS Lab)
Frederick University
School of Engineering
Department of Electrical Engineering, Computer Engineering & Informatics

g.demetriou@frederick.ac.cy • +357 96 270042 • robotics.frederick.ac.cy • Lemesos, Cyprus

CURRENT ROLES

- Associate Professor, Frederick University
- Founder & Director, Robotics & Automated Systems Laboratory (RAS Lab)
- Co-Founder & Co-Director, Akadimia Rompotikis (Robotics Academy)
- External collaborator / Marine Robotics Lead, RTD Talos

CORE EXPERTISE

- Marine robotics: USVs, ROVs, AUVs
- Navigation, localization & SLAM
- Sensor integration, fusion & perception
- Embedded and real-time robotic systems
- Autonomous systems, control & path planning
- Technology development & field validation

EDUCATION

Ph.D. in Computer Science — Specialization in Robotics 1998
University of Louisiana, Lafayette, Center for Advanced Computer Studies (CACS)

Dissertation: *"Hybrid Control Architecture for an Autonomous Underwater Vehicle (AUV)"*

M.S. in Computer Engineering 1994
University of Louisiana, Lafayette, Center for Advanced Computer Studies

B.S. in Electrical Engineering — Computer Engineering Option 1990
University of Louisiana, Lafayette

SHORT BIOGRAPHIES

Ο Δρ. Γιώργος Α. Δημητρίου είναι Αναπληρωτής Καθηγητής στο Τμήμα Ηλεκτρολόγων Μηχανικών, Μηχανικών Υπολογιστών και Πληροφορικής του Πανεπιστημίου Frederick και Ιδρυτής και Διευθυντής του Εργαστηρίου Ρομποτικής και Αυτοματοποιημένων Συστημάτων (RAS Lab). Διαθέτει πολυετή ακαδημαϊκή, ερευνητική και εφαρμοσμένη εμπειρία Ε&Α στη ρομποτική και τα αυτόνομα συστήματα, με ιδιαίτερη εξειδίκευση στη θαλάσσια ρομποτική και τα μη επανδρωμένα συστήματα. Η τρέχουσα ερευνητική του δραστηριότητα επικεντρώνεται στα Μη Επανδρωμένα Σκάφη Επιφανείας (USVs), τα υποβρύχια ρομποτικά συστήματα, την πλοήγηση και τον εντοπισμό θέσης σε περιβάλλοντα με υποβαθμισμένο ή μη διαθέσιμο GNSS, την ολοκλήρωση και σύντηξη αισθητήρων, τον αυτόνομο έλεγχο, τα ενσωματωμένα συστήματα και την πειραματική αξιολόγηση ρομποτικών πλατφορμών. Έχει συμμετάσχει σε πολυάριθμα εθνικά και διεθνή χρηματοδοτούμενα έργα έρευνας και καινοτομίας και διαθέτει σημαντική εμπειρία στη συνεργασία πανεπιστημίου–βιομηχανίας, την ανάπτυξη τεχνολογίας, την προετοιμασία ερευνητικών προτάσεων, την επιστημονική αξιολόγηση και τη διοργάνωση επιστημονικών συνεδρίων.

Giorgos A. Demetriou, PhD is an Associate Professor in the Department of Electrical Engineering, Computer Engineering and Informatics at Frederick University and the Founder and Director of the Robotics & Automated Systems Laboratory (RAS Lab). He has extensive academic, research and applied R&D experience in robotics and autonomous systems, with particular expertise in marine robotics and unmanned platforms. His current research focuses on Unmanned Surface Vehicles (USVs), underwater robotic systems, navigation and localization in GNSS-challenged environments, sensor integration and fusion, autonomous control, embedded systems, and field validation of robotic platforms. He has participated in numerous nationally and internationally funded research and innovation projects and has extensive experience in university–industry collaboration, technology development, research proposal preparation, scientific reviewing and conference activities.

ACADEMIC & PROFESSIONAL EXPERIENCE

Frederick University — Associate Professor
2006–Present

Department of Electrical Engineering, Computer Engineering and Informatics
Teaching and research in robotics, computer engineering and autonomous systems.

Founder and Director of RAS Lab
Co-founder and co-director of the Robotics Academy (Ακαδημία Ρομποτικής)

Purdue University, Fort Wayne — Assistant Professor
2004–2005

Computer Engineering
Academic teaching and research in computer engineering

University of Southern Mississippi – Gulf Coast — Assistant Professor
2000–2004

Computer Science
Computer Science Department Coordinator; Graduate Coordinator; Director of the Robotics and Graphics Laboratory

US Test, Inc. — Systems Engineer
1998–1999

Broussard, Louisiana, USA
Designed and developed ultrasonic testing systems for underground fuel-storage tanks

University of Louisiana, Lafayette — Adjunct Professor
1998

Electrical Engineering and Computer Engineering
Teaching in electrical and computer engineering

Computer Consultant
1995–1998

Lafayette, Louisiana, USA
Computer systems, networking, software installation, upgrades and technical support

University of Louisiana, Lafayette — Computer/Systems Administrator
1994–1997

Center for Advanced Computer Studies (CACS) and Apparel & Computer Integrated Manufacturing Center
Computer systems administration and technical support

University of Louisiana, Lafayette — Tutor
1991–1993

Learning Center
Mathematics, computer science, computer engineering and physics

Cyprus National Guard — First Lieutenant, Special Forces (Green Berets)
1983–1985

Military service

ACADEMIC LEADERSHIP & LABORATORY DEVELOPMENT

Robotics & Automated Systems Laboratory (RAS Lab)

Founder & Director

Frederick University

Established and leads a multidisciplinary research laboratory focused on robotics and autonomous systems, with particular expertise in marine robotics, Unmanned Surface Vehicles (USVs), underwater robotic systems, navigation and localization, sensor integration and fusion, embedded systems, autonomous control, and field deployment. The laboratory participates in nationally and internationally funded R&D projects and collaborates with industry on the development and validation of robotic technologies.

Akadimia Rompotikis (Robotics Academy)

Co-Founder & Co-Director

Frederick University

Co-founded and co-directs the University's robotics education and outreach initiative, providing robotics education and activities for school students, teachers and the wider community.

RESEARCH INTERESTS

Marine Robotics & Unmanned Systems

- Unmanned Surface Vehicles (USVs), Autonomous Underwater Vehicles (AUVs), Remotely Operated Vehicles (ROVs)
- Design, integration, testing and field deployment of autonomous and semi-autonomous robotic platforms

Navigation, Localization & Autonomy

- GNSS/INS navigation, GNSS-challenged and GNSS-denied localization
- SLAM, path planning, collision avoidance and autonomous mission execution

Perception & Sensor Systems

- Sensor integration and deployment
- Sensor/data fusion, perception and environmental monitoring
- mmWave radar, vision systems and multi-sensor robotic architectures

Embedded & Control Systems

- Embedded and real-time robotic systems
- Control architectures, autonomous control and hardware/software integration

FUNDED RESEARCH & INNOVATION PROJECTS

PANOPTIS — Camera-based AI Surveillance for the Detection of Oil and Detergent Pollution at Coastal and Port Installations **2027–2028**

RIF / ENTERPRISES/0326 — Total project budget: €176,977.50

Development of a camera-based AI surveillance system using PTZ cameras, edge triggering and AI-based image analysis for the detection of small oil slicks and detergent pollution in coastal and port environments. Frederick University / RAS Lab contribution: camera/streaming and edge-trigger development, system integration and field validation.

ORA — Smart Nature Based Monitoring Solutions: Opportunities through Rooftop Farming **2025–2027**

RIF / CODEVELOP/0824/0173 - Total project budget: €598,915

Smart monitoring and management system for rooftop vegetable cultivation; Contribution to sensing, IoT/communications, automated monitoring and system integration.

HACCS — Hull Antifouling and Continuous Cleaning System **2025–2028**

RIF / BILATERAL/ISRAEL MOST/0224 - Total project budget: €200,000

Development of the underwater camera mechanism and waterproof imaging system, collection of underwater image and sensor data, and support for experimental evaluation and validation.

IRSAI — Integrating Remote Sensing and Artificial Intelligence to Monitor Maritime Activities across Lemesos Bay **2023–2025**

RIF / DUAL USE/0922 - Total project budget: €387,996

Development and deployment of the SeaBot Unmanned Surface Vehicle for maritime surveillance, oil detection and pollution-response operations.

Development of a 3D Design Software for Children **2012-2014**

RIF / ΕΠΙΧΕΙΡΗΣΕΙΣ/ΠΡΟΪΟΝ/0311 - Total project budget: €206,940

Development of a 3D CAD environment for children using virtual construction components, including inverse-kinematics functionality.

Robotic Models for Teaching Control Systems in Design and Technology **2009–2012**

RIF / ΕΠΙΧΕΙΡΗΣΕΙΣ/ΕΦΑΡΜ/0308/60 - Total project budget: €170,000

Development of the Engino Robotics Platform controller, control software and associated educational robotics technologies.

Object Identification, Classification and Avoidance in 3-D Underwater Automated Surveillance **1995–1998**

National Science Foundation (USA) / BES 95-06771

Research on sensor-based autonomous underwater navigation and control; doctoral research contribution.

SELECTED R&D SYSTEMS & TECHNOLOGY DEVELOPMENT

ΣΑΡΙΣΑ Uncrewed Surface Vehicle (USV)

Development of a compact, high-speed USV platform for maritime surveillance, port security and research applications. The platform integrates open-source navigation and control, dual electric propulsion, advanced GNSS, onboard sensing and modular payload capability.

SeaBot Unmanned Surface Vehicle (USV)

USV developed and field-deployed within the IRSAI project for maritime surveillance and pollution monitoring in Limassol Bay. The platform supported autonomous missions, oil-detection and pollution-response activities and integration with remote-sensing systems.

mmWave Radar SLAM for GNSS-Challenged Navigation

Development and experimental evaluation of mmWave radar-based localization and mapping for unmanned surface vessels operating in structured maritime environments where GNSS may be degraded, unreliable or unavailable.

HPΩN Unmanned Surface Vehicle (USV) Family

Development of a family of **four experimental Unmanned Surface Vehicles**, ranging from approximately **1.2 m to 3 m in length**, for research in autonomous marine robotics, navigation, control, communications and sensing.

- **Early HPΩN platforms** — custom-designed control hardware and software architectures.
- **HPΩN PID-Controlled Autonomous Surface Vessel** — autonomous surface-vessel platform incorporating PID-based motion control and navigation; presented at IEEE MELECON 2016.
- **HPΩN Flexible Autonomous Surface Vessel** — further development of the HPΩN architecture as a flexible experimental USV platform; presented at IEEE MED 2016.
- **Later HPΩN development** — transition toward a modified **ArduPilot-based control architecture**, including development of a catamaran USV configuration for environmental and water-sound monitoring applications.

The HPΩN program also supported several student projects covering vehicle development, control systems, control software, communications, and object detection/tracking.

Engino Robotics Platform (ERP) — Research Prototype to Commercial Product

Development of the original Engino Robotics Platform (ERP) in collaboration with **Engino Toy Systems** through a funded R&D project. RAS Lab developed the prototype robotic controller, including the embedded control hardware, real-time control architecture, sensing and actuation interfaces, and the software environment used to program and control the system. The platform was designed as an educational robotics and control-system environment, providing students with a programmable controller, motors and sensors for the development of autonomous and interactive robotic systems. The research and development work resulted in scientific publications and conference presentations following completion of the funded project.

Following the research project, Engino further developed the technology into a **commercial educational robotics product family**, establishing the ERP product family for STEM and robotics education. The original ERP concept evolved into several commercial systems, including **ERP, ERP Pro and ERP Mini**, with programmable controllers, motors, sensors and dedicated programming software. **Engino continues to market ERP-based robotics products internationally today**.

The ERP represents one of the major **technology-transfer and commercialization outcomes of RAS Lab**, demonstrating the progression from funded university R&D and prototype development to an internationally marketed commercial robotics product family.

Remotely Operated Vehicle (ROV) for Underwater Exploration and Inspection

Development of a compact underwater ROV, including control hardware/software, underwater imaging, and remote-operation capabilities. Custom web-based control software was developed to enable remote operation and live video access through PCs, tablets, and smartphones.

All-Terrain Outdoor Mobile Robot for Surveillance

Development of a four-wheel outdoor unmanned ground vehicle for surveillance applications, including embedded control, motor-control electronics, wireless communications, live video, sensor integration and web-based remote operation.

Marine Buoy Geolocation in a 3D Bathymetric Environment

Development of a C++/OpenGL application for geolocating marine buoys within a fully immersive three-dimensional bathymetric environment. The system integrated bathymetric and geographic data and implemented coordinate transformations between real-world latitude/longitude positions and the virtual environment for marine visualization and analysis.

Electronic System for Measuring Sea Currents

Development of an electronic system for automated measurement of sea-current speed and direction, providing real-time information for sailing applications. The original system reached production, with subsequent development work planned.

VROBO — Virtual Robotics Development Platform

Development of a web-accessible virtual robotics environment for education and research, supporting offline programming of multiple robotic manipulators and articulated systems through a common robot programming language. The platform incorporated realistic constraints and was developed using Java and Java 3D for use in robotics teaching and experimentation.

VisiLogic — Intelligent Tutorial for Digital Logic Design

Development of an interactive educational software environment for teaching Digital Logic Design, combining a Java-based graphical interface with an expert-system component implemented in C++ and CLIPS. The system supported teaching, testing and assessment activities and was used in university-level Logic Design courses.

RECENT RESEARCH & INNOVATION PROPOSAL ACTIVITY

ΑΚΡΙΤΑΣ — Autonomous Maritime Surveillance & Protection System **2026**
Cyprus Ministry of Defence / ΑΘΗΝΑ-2030+ — Theme 2: Unmanned Systems
Frederick University / RAS Lab partner; contribution to USV architecture, navigation and autonomy, mmWave-based localization, sensing and system integration.

M-SLAM **2026**
RIF / CONCEPT/0326
Frederick University / RAS Lab partner; development and validation of SLAM and localization technologies for autonomous robotic systems.

Spot-the-Spill (StS) **2026**
BlueActionBANOS — Open Call for Community-Led Actions
Frederick University partner; USV Systems Lead, with responsibility for USV development, sensor-payload integration and field validation.

KOURSA — Knowledge-driven Optimization Using Real-time Service Analytics **2026**
RIF / AI in Government — Challenge 4
Frederick University partner; contribution to AI-enabled analysis and decision-support technologies for public transport.

UGreen — Community-Led Urban Green Spaces: Participatory Co-Design and Technology-Enabled Stewardship within New European Bauhaus Ideals **2025**
RIF / EXCELLENCE/0925
Frederick University / RAS Lab partner.

Aphasia Rehabilitation via Codesign, Accessible Discussions and Inclusive Approaches **2025**
RIF / EXCELLENCE/0925
Frederick University partner.

CONSULTANCY & INDUSTRY COLLABORATION

RTD Talos Ltd **Current**

External Collaborator / Marine Robotics Lead

Technical and R&D collaboration in marine robotics, unmanned systems, system development, technology integration, and preparation of research and innovation proposals.

PCADMIN22 Ltd **Current**

Technical / R&D consultancy

Technical and R&D collaboration related to software and AI-enabled systems, robotics applications, system integration, and preparation of research and innovation proposals.

PUBLICATIONS

Doctoral Thesis

D1. "Hybrid Control Architecture for an Autonomous Underwater Vehicle (AUV)", University of Louisiana at Lafayette, 1998.

Book Chapters

B1. N. Eteokleous, G. A. Demetriou, A. Lambrou, "The Pedagogical Framework for Integrating Robotics as an Interdisciplinary Learning - Cognitive Tool," in *Information and Communications Technology: New Research*, Nova Science Publishers, Inc., 2013, ch. 7, pp. 141-158.

B2. G. A. Demetriou, "Mobile Robotics in Education and Research," in *Mobile Robots*, InTech Publications, 2011, Rijeka, Croatia, ch. 2, pp. 27-48.

Journal Publications

J1. G. Demetriou, "A Remotely Operated Vehicle for Education", International Journal of Emerging Technologies in Learning, 2019

J2. G. Demetriou, N. Eteokleous, "Mobile Robotic Kits for Education", International Journal of Emerging Technologies in Learning, 2016.

J3. G. Demetriou, G. Simmons, "VisiLogic: Digital Logic Education Through Interaction," The Cyprus Journal of Science and Technology, Vol. 5, No. 3, 2007.

J4. G. Demetriou, A. Lambert. "An Extensible Object Oriented Virtual Robotics Development Platform for Use in Robotics Education and Research," IEEE Robotics & Automation, Vol. 12, No 4, pp. 75-91, Dec. 2005.

J5. G. Demetriou, C. Brown, L. Perkins. "An Algorithm for Geolocation: Marine Buoys in a Fully Immersive Three Dimensional Bathymetric Environment", Journal of Mississippi Academy of Science, Vol. 49, No. 1, Jan. 2004.

J6. K. P. Valavanis, D. Gracanin, M. Matijasevic, R. Kolluru, G. A. Demetriou, "Control Architectures for Autonomous Underwater Vehicles," IEEE Control Systems, Vol. 17, No. 6, pp. 48-64, Dec. 1997.

Conference Publications

C1. G. A. Demetriou, A. Merry, P. Petridis, K. Zacharia, and N. Christodoulou, "A Smart Rooftop Farming Platform for Urban Sustainability: IoT Sensing, Plant Phenotyping and Automated Irrigation in the ORA Testbed," presented at EENVIRO 2026, Bucharest, Romania, November 1–4, 2026.

C2. A. Lazarou, M. Christofi, C. Paparistodimou, and G. A. Demetriou, "SARISA: A Cost-Effective Open-Source USV Platform for Port Security Applications," IEEE Mediterranean Conference on Control and Automation (MED 2026), pp. 1072–1076, 2026.

C3. G. A. Demetriou, S. Lazaridis, G. Trimithiotis, M. Christofi, A. Louka, and S. Alkiviadous, "Open-Source BlueOS for Controlling the SeaBot USV," IEEE Advancements in Sustainable Engineering (CASE 2025), Lemesos, Cyprus, September 11–12, 2025.

C4. G. A. Demetriou, A. Menelaou, D. Kletou, P. Kleitou, C. Kakoulli, A. Artusi, X. Milidonis, M. Angelini, G. Trimithiotis, S. Lazaridis, "IRSAI: Integrating Remote Sensing and Artificial Intelligence to monitor maritime activities across Lemesos Bay", The 19th IEEE International Conference on Control & Automation (IEEE ICCA 2025), Tallinn, Estonia June 30 – July 3, 2025

C5. G.A. Demetriou, S. Ioannou, A. Hadjipieri, I.E. Panayidou, A. Papasavva, A. Savva, "ERON: A Flexible Autonomous Surface Vessel," in The 24th Mediterranean Conference on Control and Automation (MED 16), Athens, Greece, June 21-24, 2016.

C6. G.A. Demetriou, A. Hadjipieri, I.E. Panayidou, A. Papasavva, S. Ioannou, "ERON: A PID Controlled Autonomous Surface Vessel," in 18th Mediterranean Electrotechnical Conference (MELECON 16), Lemesos, Cyprus, April 18-20, 2016.

C7. G. A. Demetriou, A. Lambrou, N. Eteokleous, C. Sisamos, "*The Engino Robotics Platform (ERP) Controller for Education*," in 21st IEEE Mediterranean Conference on Control and Automation (MED 13), Platanias, Chania, Crete, Greece, 2013.

C8. G. A. Demetriou, "Robotic Wheelchairs," in 9th IEEE International Conference on Information Technology and Applications in Biomedicine (ITAB2009), Larnaca, Cyprus, November 5-7, 2009.

C9. G. A. Demetriou, A. Vystavkin, S. Anastasiou, A. Theofilou, C. Giannopoulos, D. Yerolemou. "Indoor Mobile Robot Localization Using a Wireless Network: WiFiBot Case Study," in The 2008 International Conference on Artificial Intelligence (ICAI 08), Las Vegas, Nevada, July 14-17, 2008.
C10. G. Demetriou. "A Survey of Sensors for Localization of Unmanned Ground Vehicles (UGVs)," in The 2006 International Conference on Artificial Intelligence (ICAI 06), Las Vegas, Nevada, June 26-29, 2006.
C11. G. Demetriou, G. Simmons. "Visual Transistors: An Intelligent Tutorial for Teaching Transistor Functionality for Digital Logic Students," in The 2005 International Conference on Machine Learning; Models, Technologies and Applications, Las Vegas, Nevada, June 23-26, 2005.
C12. C. Brown, G. Demetriou, L. Perkins. "Geolocating Marine Buoys in a Fully Immersive Three Dimensional Bathymetric Environment," in The 2004 International Conference on Modeling, Simulation and Visualization Methods, Las Vegas, Nevada, June 21-24, 2004.
C13. G. Demetriou, G. Simmons. "VisiLogic: An Intelligent Visual Tool for Teaching Digital Logic," in The 2004 International Conference on Machine Learning; Models, Technologies and Applications, Las Vegas, Nevada, June 21-24, 2004.
C14. G. Demetriou, A. Lambert. "VROBO: Virtual Robotics Development Platform for Use in Robotics Education and Research," in Hawaii International Conference on Computer Sciences, Honolulu, Hawaii, January 15-18, 2004.
C15. G. Demetriou, G. Simmons. "Visual K-Map: An Intelligent Tutorial for Solving Karnaugh Maps," in The 2003 International Conference on Machine Learning; Models, Technologies and Applications, Las Vegas, Nevada, June 23-26, 2003.
C16. G. Demetriou, K. P. Valavanis, "A State Configured Sensor Based Control Architecture for an Autonomous Underwater Vehicle," in the 5th IEEE Mediterranean Conference on Control and Systems, Paphos, Cyprus, July 1997.
C17. D. Gracanin, K. P. Valavanis, G. Demetriou, R. Kolluru, "Development of a Virtual Reality Testbed and AUV Control Architecture for Coastal / Shallow Water Environments," in Proceedings of COSU'97 Coastal Ocean Space Utilization, Vol. 2, Singapore, May 1997, pp. 305-320.
C18. G. Demetriou, M. Talley, D. Gracanin, K. P. Valavanis, "A Virtual Reality Environment for Real-Time Tele-Robot Control: The AdeptOne/AdeptThree Case Study," in Proceedings of the Fourth IEEE Mediterranean Symposium on New Directions in Control and Automation, Chania, Crete, Greece, June 10 - 13, 1996, pp: 370-374.

Edited Conference Proceedings

P1. Associate Editor for the proceedings of The 21st Mediterranean Conference on Control and Automation (MED'13), Vol. I, June 2013, Platanias, Chania, Greece, 2013
P2. Associate Editor for the Proceeding of the 2008 International Conference on Artificial Intelligence (ICAI'08), Vol. I and II, June, 2008, Las Vegas, Nevada, USA
P3. Associate Editor for the Proceeding of the 2007 International Conference on Artificial Intelligence (ICAI'07), Vol. I and II, June, 2007, Las Vegas, Nevada, USA
P4. Associate Editor for the Proceeding of the 2006 International Conference on Artificial Intelligence (ICAI'06), Vol. I and II, June, 2006, Las Vegas, Nevada, USA

SCIENTIFIC REVIEWING & CONFERENCE ACTIVITY

Evaluations

- Evaluator, Information Society Technologies (IST) 2005–06 Work Programme in Advanced Robotics, European Commission, Brussels, 2006.
- Evaluator, Research Promotion Foundation of Cyprus.

Journal & Conference Reviewing

- Reviewer, IEEE Journal of Intelligent and Robotic Systems.
- Reviewer, International Journal on Artificial Intelligence Tools (IJAIT).
- Reviewer, IEEE Mediterranean Conference on Control and Automation (MED), including **MED 2026**.
- Reviewer, World Congress in Computer Science, Computer Engineering and Applied Computing (WORLDCOMP), 2006–2008.
- Reviewer, International Conference on Artificial Intelligence (ICAI), 2006–2008.
- Reviewer, IEEE ICRA, 2004.
- Reviewer, Multi Conference in Computer Science and Computer Engineering, 2003–2004.
- Reviewer, Florida Artificial Intelligence Research Society (FLAIRS), 2001–2002.

Conference Organization & Leadership

- Member of the Organizing Committee, IEEE International Conference on Control & Automation (ICCA 2025).
- Chair, “Education and Training,” IEEE Mediterranean Conference on Control and Automation (MED), 2016 and 2013.
- Chair, “Unmanned Ground Vehicles,” International Conference on Artificial Intelligence (ICAI), 2008 and 2007.
- Chair, “Sensor Based Navigation and Control of Unmanned Ground Vehicles,” ICAI 2006.
- Chair, International Conference on Modeling, Simulation and Visualization Methods, 2004.
- Chair, IEEE ICRA, 2004.
- Chair, Multi Conference in Computer Science and Computer Engineering, 2003.
- Chair, FLAIRS, 2002 and 2001.

Program Committees

- IEEE Mediterranean Conference on Control and Automation, 2016 and 2013.
- WORLDCOMP, 2006–2008.
- FLAIRS, 2002.

SERVICE & PROFESSIONAL CONTRIBUTION

Service to Frederick University

- Founder and Director, Robotics & Automated Systems Laboratory (RAS Lab).
- Co-Founder and Co-Director, Akadimia Rompotikis (Robotics Academy).
- Participation in Departmental and University committees.
- Participation in Researcher's Night and other University outreach activities.
- Development and delivery of robotics workshops and educational activities for schools and the wider community.
- Collaboration with the Cyprus Ministry of Education on robotics-related educational activities.

Previous Academic Service

- Coordinator of the Computer Science graduate and undergraduate programs, University of Southern Mississippi – Gulf Coast.
- Director, Robotics and Graphics Laboratory, University of Southern Mississippi – Gulf Coast.
- Contributed to establishing the M.S. in Computer Science program at Stennis Space Center.
- Restructured the Computer Science curriculum at USM-GC.
- Established the Robotics Laboratory and Graphics Laboratory at USM-GC.
- Developed graduate and undergraduate courses in Robotics and Computer Graphics.
- Founded the local ACM student chapter.
- Organized high-school programming competitions in coastal Mississippi.

Community & Outreach

- Workshops in mobile robotics for public and private schools in Cyprus.
- Robotics seminars and workshops for teachers, students and community organizations.
- Judge, World Robotics Olympiad (WRO).

TEACHING & STUDENT SUPERVISION

Teaching

Extensive teaching experience in robotics, computer engineering and computer science at Frederick University, Purdue University Fort Wayne, the University of Southern Mississippi–Gulf Coast, and the University of Louisiana at Lafayette.

Teaching areas include robotics, digital systems, computer organization and architecture, advanced computer architecture, embedded and control systems, parallel processing, programming, and related computer engineering and computer science subjects.

Student Supervision

Extensive supervision of undergraduate and postgraduate students in robotics, autonomous systems, marine robotics, navigation and localization, embedded systems, sensing, control, computer engineering and related areas. The following presents a selection of supervised undergraduate and postgraduate theses and projects, together with participation in doctoral dissertation committees.

Ph.D. Dissertation Committees

- **Georgios Kyprianou**, Ph.D., Neapolis University Pafos, "Path Planning in the Industry 4.0 Era: From Multi-Robots to Educational Platforms. Challenges and Trends," 2023 — Doctoral Committee Member.
- **Savvas Piperidis**, Ph.D., Technical University of Crete, "Collaborative Behavior of Autonomous Underwater Robotic Vehicles," 2014 — Ph.D. Examination Committee Member.

Selected Master's Theses and Projects

- **Stefanos Lazaridis**, Master's Thesis, *"Hardware Implementation for the SeaBot USV – Electronics,"* Frederick University, 2026.
- **Antonis Lambrou**, M.S., *"The Engino Robotics Platform (ERP),"* 2013.
- **Christopher Brown**, M.Sc. in Computer Science, *"An Algorithm for Geolocation: Marine Buoys in a Fully Immersive Three-Dimensional Bathymetric Environment,"* 2004.
- **Allan Lambert**, M.Sc. in Computer Science, *"An Extensible Object-Oriented Virtual Robotics Development Platform for Use in Robotics Education and Research,"* 2003.
- **Tony Vann**, M.Sc. in Computer Science, *"The Harmful Algal Blooms Observing System Weather Tool (HABSOS-WT),"* 2003.
- **Michael Davide**, M.Sc. in Computer Science, 2003.
- **Jack Summer**, M.Sc. in Computer Science, *"Laboratory Information Management System for the Watson Electric Generating Plant,"* 2002.
- **Mary Steelman**, M.Sc. in Computer Science, *"OpenGL and Java,"* 2001.
- **David Rodriguez**, M.Sc. in Computer Science, *"Dry-docking Ballast Schedules Program,"* 2000.

Selected Undergraduate Theses

- **Pavlos Nikou**, "Vision-Based Obstacle Detection and Collision Avoidance for the ΣΑΡΙΣΑ Unmanned Surface Vessel: Monocular Camera Perception with ArduPilot Waypoint Guidance," Frederick University, 2026.
- **Andreas Lazarou**, "Development of a Radar-Based SLAM Module for Autonomous Localization," Frederick University, 2025–2026.
- **Christodoulos Xenofontos**, "Design and Development of an Unmanned Ground Vehicle (UGV) Using OpenHD, Raspberry Pi, and PiBorg Motor Controller," Frederick University, 2026.
- **Christos Paparistodimou**, "Dual-Antenna RTK-GNSS Navigation System for SARISA USV: Magnetometer-Independent Heading and Precision Positioning," Frederick University, 2026.
- **Sofiia Nifontova**, "System Analysis and Design of the ORA Smart Rooftop Farming IoT Platform," Frederick University, 2026.
- **Andreas Hadjipieri**, B.S., "ERON: Unmanned Surface Vehicle," 2017.
- **Nasia Theodorou**, "Autonomous Rescue Boat System – ERON," 2017.

- **Andreas Chrisafis**, "Unmanned Ground Vehicles (UGV)," Frederick University.
- **Irene Erika Panayidou**, B.S., "Control System for ERON – Autonomous Surface Vessel," 2016.
- **Andreas Savva**, B.S., "Control Software for ERON," 2016.
- **Antonis Papasavva**, B.S., "ERON – Communication Module," 2016.
- **Stavros Cassapis**, B.S., "Object Detection and Tracking for ERON," 2016.
- **Apostolis Charalambous**, "LUROMATIC ROV," Frederick University, 2014.
- **Orestis Michaelides**, "Arduino GPS System for Measuring Distance and Speed," Frederick University, 2014.
- **Marios Michael**, B.S., "Beaglebone Based Mobile Robot (B.B.M.R.)," Frederick University, 2010.
- **Demetra Gerolemou**, B.S., *"Indoor Mobile Robot Localization Using a Wireless Network: WiFiBot Case Study,"* Spring 2009.
- **Andrey Vystavkin**, B.S., *"Indoor Mobile Robot Localization Using a Wireless Network: WiFiBot Case Study,"* Spring 2008.
- **Socrates Anastasiou**, B.S., *"Indoor Mobile Robot Localization Using a Wireless Network: WiFiBot Case Study,"* Spring 2008.
- **Constantinos Giannopoulos**, B.S., *"Indoor Mobile Robot Localization Using a Wireless Network: WiFiBot Case Study,"* Spring 2008.
- **Rondrell Flowers**, B.S. Honors Project, "Visual K-Map: An Intelligent Tutorial for Solving Karnaugh Maps," 2003.

AWARDS & RECOGNITION

- **Conference Best Paper Award**, "Indoor Mobile Robot Localization Using a Wireless Network: WiFiBot Case Study," International Conference on Artificial Intelligence (ICAI 2008), Las Vegas, Nevada, USA, 2008.
- **Achievement Award**, World Congress in Computer Science, Computer Engineering and Applied Computing (WORLDCOMP 2007), Las Vegas, Nevada, USA, 2007.
- **Achievement Award**, World Congress in Computer Science, Computer Engineering and Applied Computing (WORLDCOMP 2006), Las Vegas, Nevada, USA, 2006.
- **SILMA Inc. National Award**, for simulation of manufacturing cells with realistic constraints using the SILMA CimStation platform, 1998.

REFERENCES

Dr. Ing. Kimon P. Valavanis, Fellow AAAS

Distinguished University Professor Emeritus, University of Denver, USA
HERON – Robotics Center of Excellence, ATHENA Research Center, Greece
Safety and Security Robotics
Athens, Greece

Tel: +30 6947116314
Email: kvalavanis@icuas.com | kvalavanis@gmail.com

Dr. Alexandros Michaelides

CEO RTD Talos
Diogenous 1
Kykkos' Commercial Center, Block A, 4th Floor
2404 Engomi, Lefkosia, Cyprus

Tel: +357 22454333
Email: am@talos-rtd.com

Dr. Efthyvoulos Kyriacou

Associate Professor
Dep. of Electrical Engineering & Computer Science and Engineering
Cyprus University of Technology
Arch. Kyprianou 30, 3036, Lemesos, Cyprus

Tel: +357 25002022
Email: efthyvoulos.kyriacou@cut.ac.cy