Nikolaos Vitzilaios, PhD, FHEA

CONTACT INFORMATION

Assistant Professor
University of South Carolina
Department of Mechanical Engineering
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RESEARCH INTERESTS

Unmanned Systems and Robotics: unmanned vehicles navigation and control, robot teams, field robotics, mechatronics, artificial intelligence, social and educational robotics, machine learning.

EDUCATION

Technical University of Crete, Chania, Crete, Greece
School of Production Engineering & Management
Intelligent Systems & Robotics Laboratory, Advisor: Professor Nikos C. Tsourveloudis

Ph.D. in Production Engineering & Management (Robotics) **February 2010**

- Thesis: *Stability of Unmanned Aerial Vehicle Flights: Control Techniques and Selection of Optimal Characteristics*

M.Sc. in Production Engineering & Management (Robotics) **November 2005**

- Thesis: *Design and Development of an Autonomous Navigation System for Unmanned Helicopters*

B.Sc. in Production Engineering & Management (5 years of study) **September 2004**

- Thesis: *Design and Development of the TALOS Gantry Robot*
- GPA: 8.15/10, Graduation rank: 1/120

ACADEMIC APPOINTMENTS

Assistant Professor **August 2017 to present**
University of South Carolina, Columbia, SC, USA
- College of Engineering & Computing
- Department of Mechanical Engineering

Senior Lecturer in Robotics **November 2016 to August 2017**
Kingston University London, London, UK
- Faculty of Science, Engineering & Computing
- Department of Mechanical & Automotive Engineering

Lecturer in Robotics & Mechatronics **January 2016 to October 2016**
Kingston University London, London, UK
- Faculty of Science, Engineering & Computing
- Department of Mechanical & Automotive Engineering

Research Scientist **December 2012 to December 2015**
University of Denver, Denver, CO, USA
- Daniel Felix Ritchie School of Engineering & Computer Science
- University of Denver Unmanned Systems Research Institute (DU^{2}SRI)

Adjunct Lecturer **September 2014 to November 2014**
University of Denver, Denver, CO, USA
- Daniel Felix Ritchie School of Engineering & Computer Science
- Department of Electrical & Computer Engineering

Postdoctoral Fellow **July 2011 to November 2012**

University of Alberta, Edmonton, AB, Canada

- Department of Electrical & Computer Engineering
- Applied Nonlinear Controls Laboratory

EXPERTISE

Unmanned Aerial Vehicles:

- Hardware and software implementation for helicopter UAVs.
- Rotorcraft UAV maintenance and piloting.
- Hands-on experience in various types of UAV helicopters and multi-rotors
  - Bergen Industrial Twin, Industrial Turbine
  - Thunder Tiger Raptor 30-50-60-90 series, Mini Titan
  - Align TREX 450-600
  - Arducopter, DJI Phantom

Control Theory and Engineering:

- Linear and Nonlinear Systems Theory, System Identification and Modeling, Model-Based and Model-Free Control, Robotics and Computer Vision, Evolutionary Optimization

TEACHING EXPERIENCE

University of South Carolina, Columbia, SC, USA

Assistant Professor **August 2017 to present**

- Instructor
  - EMCH 111: Introduction to Engineering Graphics & Visualization
  - EMCH 516: Control Theory in Mechanical Engineering

Kingston University London, London, UK

Senior Lecturer **October 2016 to August 2017**

- Module Leader
  - ME5012: Electronic Systems, Control & Computing
- Instructor
  - ME5012: Electronic Systems, Control & Computing
  - ME7731: Control Systems with Embedded Implementation
  - ME7732: Mechatronic Design & Automation

Kingston University London, London, UK

Lecturer **January 2016 to September 2016**

- Instructor
  - ME4012: Analytical Methods, Computing, Electrical & Electronic Systems
  - ME5112: Analytical Techniques, Electronics & Control
  - ME6131: Computer Aided Engineering & Mechatronics
  - ME7732: Mechatronic Design & Automation

University of Denver, Denver, CO, USA

Adjunct Lecturer **September 2014 to November 2014**

- Instructor for ENGR 4810: Advanced Topics: Unmanned Aircraft Systems
  - Postgraduate course (MSc in Mechatronic Systems Engineering)
  - Off-campus lectures offered to United Launch Alliance employees

Technical University of Crete, Chania, Greece

Teaching Assistant **September 2008 to January 2009**

- Instructor for DPEM 502: Robotics Laboratory
  - Undergraduate course in Production Engineering & Management
- Grader for DPEM 304: Heat Transfer
  - Undergraduate course in Production Engineering & Management

Technological Educational Institute of Crete, Chania, Greece

Adjunct Lecturer **September 2006 to June 2008**

- Instructor for TF 3001/3101: Environmental Statistics
  - Undergraduate course in Environmental and Natural Resources Engineering

Professional Experience

University of South Carolina, Columbia, SC, USA

Assistant Professor **August 2017 to present**
Department of Mechanical Engineering

- Instructor in undergraduate and graduate courses in the areas of robotics, controls and mechatronics.
- Research on ground, aerial and marine robotics.
- Supervision of undergraduate and graduate students.
- Author of journal and conference publications.
- Author and winner of research proposals-grants.

Kingston University London, London, UK

Senior Lecturer in Robotics **November 2016 to August 2017**
Lecturer in Robotics & Mechatronics **January 2016 to October 2016**
Department of Mechanical & Automotive Engineering

- Member of the Machine Systems Subject Group.
- Module Leader for ME5012: Electronic Systems, Control & Computing.
- Instructor in undergraduate and postgraduate courses in the areas of robotics, controls and mechatronics.
- Research on ground, aerial and medical robotics.
- Supervision of undergraduate and postgraduate students in engineering and computer science.
- Author of journal and conference publications.
- Author and winner of research proposals-grants.

University of Denver, Denver, CO, USA

Research Scientist **December 2012 to December 2015**
Department of Electrical & Computer Engineering

- Funding: National Science Foundation (NSF), Computer & Network Systems (CNS)
  - "MRI Collaborative: Development of an Intelligent, Autonomous, Unmanned, Mobile Sensor" (grant CNS-1229236)
  - Supervisor (Co-PI): Associate Professor Matthew J. Rutherford
  - PI: Professor Kimon P. Valavanis
- Design and development of a helicopter UAV autopilot system (hardware & software).
- Design of a mobile landing platform for rotorcraft UAVs.
- Maintenance and piloting of University of Denver Unmanned Systems Research Institute (DU^2SRI) fleet.
- Supervision of graduate and undergraduate students in engineering and computer science.
- Winner of one NSF funded grant.

Adjunct Lecturer **September 2014 to November 2014**

University of Alberta, Edmonton, AB, Canada

Postdoctoral Fellow **July 2011 to November 2012**
Department of Electrical & Computer Engineering

- Funding: Natural Sciences and Engineering Research Council of Canada
  - "Inspection system for electrical transmission lines using an Unmanned Aerial Vehicle (UAV)"
  - Supervisor (PI): Professor Alan F. Lynch
- Work on various aspects of indoor and outdoor autopilot development for helicopter UAVs.
- Research involved mathematical modeling, model identification, navigation and control algorithm design, hardware-software implementation, multi-view geometry, 3D modeling from images, and real-time tracking.

Hellenic Army Chemical Laboratories, Athens, Greece

Military Service **March 2010 to November 2010**

- Systems and network administrator.
- Information security consultant.

Technical University of Crete, Intelligent Systems & Robotics Laboratory, Chania, Greece

Research Assistant, Teaching Assistant **November 2003 to February 2010**

Technical University of Crete, Machine Tools Laboratory, Chania, Greece

Research Assistant **May 2009**

Technological Educational Institute of Crete, Chania, Greece

Adjunct Lecturer **September 2006 to June 2008**

Asprofos Engineering SA, Human Resources Division, Athens, Greece

Junior Manager **July 2002 to August 2002**

- Development of a Human Resources Evaluation System based on Emotional Intelligence (EQ) techniques.
- Internship.

Competitions and Exhibitions

Technical University of Crete Eco Racing Team, Technical University of Crete, 2008
- Design and development of a fuel efficient car.
- Participation in the Urban Concept competition, Shell Eco Marathon Europe, Pau, France.

Robotic Soccer competition and Exhibition, Technical University of Crete, 2006
- Participation in Robocup 2006, Bremen, Germany.

Professional Service

Referee Service
- *IEEE International Conference on Robotics and Automation ICRA (2009-2010, 2017-2019)*
- *IEEE Mediterranean Conference on Control and Automation (2009, 2011, 2013-2016)*
- *IEEE International Conference on Robotics and Biomimetics (2008)*
- *IEEE Robotics and Automation Magazine*
- *International Conference on Unmanned Aircraft Systems (2012, 2013)*
- *Aerospace Science & Technology*
- *Journal of Intelligent & Robotic Systems*
- *Journal of Systems & Control Engineering*

Conference Service

- Associate Editor, *IEEE/RSJ International Conference on Intelligent Robots and Systems IROS* (2017, 2018).
- Local Arrangements Chair, *2015 International Conference in Unmanned Aircraft Systems (ICUAS '15)*, Denver, CO, USA, June 2015.

PROFESSIONAL MEMBERSHIPS

Institute for Electrical and Electronics Engineers (IEEE), Member, 2002–present

- IEEE Control Systems Society (2011–present)
- IEEE Robotics and Automation Society (2008–present)

American Institute of Aeronautics and Astronautics (AIAA), Member, 2011–present

Association of Unmanned Vehicles International (AUVSI), Member, 2012–present

International Federation of Automatic Control (IFAC), Affiliate, 2014–present

Technical Chamber of Greece, Chartered Mechanical Engineer, 2004–present

GRANTS

Awaiting Decision

[1] Co-PI, "RI:Medium: In situ inspections in the presence of significant external forces", NSF Robust Intelligence, University of South Carolina budget: $1,200,000, submitted October 2018.

[2] Co-PI, "Smart Rail Center: Intelligent Railways in Integrated Systems (IRIS)", Federal Railway Administration BAA, University of South Carolina budget: $1,388,826, submitted July 2018.

Awarded

[3] PI, "Indoor localization system for autopilot experiments: The Vicon system capital bid inquiry", Kingston University Competitive Research Grant, £70,000.
Awarded November 2016.

[4] PI, "Equipment for enabling research in the domain of vision-based UAV applications", Dean's Fund, Faculty of SEC, Kingston University London, £4,868.
Awarded November 2016.

[5] Co-PI, "CPS: TTP Option: Synergy: Collaborative Research: Dependable Multi-Robot Cooperative Tasking in Uncertain and Dynamic Environments", NSF, CNS-1446285, University of Denver budget: $499,994. January 1, 2015 to December 31, 2017.

AWARDS

Higher Education Academy, UK

- Fellow of the Higher Education Academy, FHEA, 2016.

The State Scholarships Foundation, Greece

- Pre graduate scholarships for higher education, 2002, 2003, 2004.
- Award for Academic Excellence, 2002, 2003, 2004.

The Technical Chamber of Greece

- Award for Academic Excellence in Engineering Sciences, 2003, 2004.
- Scholarship and award for Academic Excellence in Graduate Engineering Studies, 2005.

STUDENT ADVISING

Michail Kalaitzakis
PhD student in Mechanical Engineering, University of South Carolina. UAV Control under significant external forces. Primary advisor: Nikolaos Vitzilaios. 2017–present.

Brennan Cain
Undergraduate student in Computer Science & Engineering, University of South Carolina. UAV support for marine robots. Primary advisor: Nikolaos Vitzilaios. 2017–present.

Hideki Ngo
MSc student in Engineering Projects, Kingston University London. Automatic Bike Transmission. Primary advisor: Nikolaos Vitzilaios. 2016–2017.

Arturas Gulevskis
MSc student in Automotive Engineering, Kingston University London. Development of wireless bicycle indicators. Primary advisor: Nikolaos Vitzilaios. 2016–2017.

Daniel Lewington
MSc student in Mechanical Engineering, Kingston University London. Development of an automated testing unit for EW selectors. Primary advisor: Yahya Zweiri. 2016.

Alejandro Diaz de Cerio Sanchez
MSc student in Mechanical Engineering, Kingston University London. Dual-tilted quadrotor modelling. Primary advisor: Yahya Zweiri. 2016–2017.

Christian Aasen
MSc student in Mechanical Engineering, Kingston University London. Development of a automated mounting system for subsea nodes. Primary advisor: Yahya Zweiri. 2016.

Visakha Nanayakkara
PhD student in Mechanical Engineering, Kingston University London. Development of a human hand kinematic model. Primary advisor: Mehmet Necip Sahinkaya. 2016–2017.

Jessica Alvarenga
PhD student in Electrical & Computer Engineering, University of Denver. Identification, modeling and control of unmanned helicopters. Primary advisor: Kimon P. Valavanis. 2013–2016.

Thomas Hamill
MSc student in Computer Science, University of Denver. Autopilot software development for unmanned vehicles. Primary advisor: Matthew J. Rutherford. 2014–2016.

Stephen Conyers
PhD student in Mechatronic Systems Engineering, University of Denver. Design & development of mobile landing platforms for rotorcraft UAVs. Primary advisor: Matthew J. Rutherford. 2013–2016.

Ashkan Hajjam
MSc student in Mechatronic Systems Engineering, University of Denver. Collaborative navigation for unmanned ground and aerial vehicles. Primary advisor: Matthew J. Rutherford. 2014–2016.

Joseph Lewis
Undergraduate student in Computer Science, University of Denver. Autopilot software development for unmanned vehicles. Primary advisor: Matthew J. Rutherford. 2013–2014.

Konstantinos Kanistras
PhD student in Electrical & Computer Engineering, University of Denver. Design & development of Circulation Control Wings for unmanned airplanes. Primary advisor: Kimon P. Valavanis. 2013–2014.

Adriano Bittar
PhD student in Electrical & Computer Engineering, University of Denver. Design & development of a simulation framework for unmanned aerial and ground vehicles utilizing MATLAB and X-Plane. Primary advisor: Kimon P. Valavanis. 2013–2014.

Florence Mbithi
MSc student in Mechatronic Systems Engineering, University of Denver. Design & development of a propulsion system for low speed unmanned surface vehicles. Primary advisor: Matthew J. Rutherford. 2013–2014.

Bryan Godbolt
PhD student in Electrical & Computer Engineering, University of Alberta. Autopilot development for helicopter UAVs. Primary advisor: Alan F. Lynch. 2012–2013.

IT SKILLS

Computer Aided Design:
- PTC Creo (ProEngineer), Solidworks, CATIA

Computer Programming:
- C, C++, Pascal, Visual Basic, HTML

Numerical Analysis and Statistics:
- MATLAB, R, Maple, Mathematica, SPSS

Version Control and Software Configuration Management:
- DVCS (Git), VCS (SVN)

Desktop Editing and Productivity Software:
- Emacs, Eclipse
- TEX (LATEX, BIBTEX)
- Microsoft Office, OpenOffice.org, LibreOffice, Google Docs

Operating Systems:
- Microsoft Windows family, Linux, DOS, ROS

Refereed Journal Publications and Book Chapters

[1] Ali Bin Junaid, Alejandro D.C. Sanchez, Javier B. Bosch, **Nikolaos Vitzilaios**, and Yahya Zweiri. Design and Implementation of Dual-Axis Tilting Quadcopter. *Robotics*, MDPI, 2018. Under review.

[2] Bharat Joshi, Brennan Cain, James Johnson, Michail Kalaitzakis, Sharmin Rahman, Marios Xanthidis, Alan Hernandez, Alberto Quattrini Li, **Nikolaos Vitzilaios**, and Ioannis Rekleitis. Experimental Comparison of Open Source Visual-Inertial-Based State Estimation Algorithms. In: *IEEE Robotics and Automation Letters (RA-L)*, 2018. Under review.

[3] Visakha K. Nanayakkara, Giuseppe Cotugno, **Nikolaos Vitzilaios**, Demetrios Venetsanos, Trishatha Nanayakkara, and M. Necip Sahinkaya. The Role of the Morphology of the Thumb in Anthropomorphic Grasping: A Review. *Frontiers in Mechanical Engineering: Mechatronics*, 2017. doi:10.3389/fmech.2017.00005

[4] Jessica Alvarenga, **Nikolaos I. Vitzilaios**, Matthew J. Rutherford, and Kimon P. Valavanis. Modeling and Frequency-Domain Parameter Identification of a Small-Scale Flybarless Unmanned Helicopter. *Encyclopedia of Aerospace Engineering: UAS*, John Wiley & Sons Ltd, June 2016. doi:10.1002/9780470686652.eae1155

[5] Jessica Alvarenga, **Nikolaos I. Vitzilaios**, Kimon P. Valavanis, and Matthew J. Rutherford. Survey of Unmanned Helicopter Model-Based Navigation and Control Techniques. *Journal of Intelligent and Robotic Systems*, 80(1):87–138, October 2015. doi:10.1007/s10846-014-0143-5

[6] Bryan Godbolt, **Nikolaos I. Vitzilaios**, and Alan F. Lynch. Experimental Validation of a Helicopter Autopilot Design using Model-Based PID Control. *Journal of Intelligent and Robotic Systems*, 70(1-4):385–399, April 2013. doi:10.1007/s10846-012-9720-7

[7] **Nikos I. Vitzilaios**, and Nikos C. Tsourveloudis. Safe Test Flights for Small Rotorcrafts. *Informatics in Control, Automation and Robotics [Springer Series: Lecture Notes in Electrical Engineering (LNEE)]*, 37:153–166, 2009. doi:10.1007/978-3-642-00271-7_11

[8] **Nikos I. Vitzilaios**, and Nikos C. Tsourveloudis. An Experimental Test Bed for Small Unmanned Helicopters. *Journal of Intelligent and Robotic Systems*, 54(5):769–794, 2009. doi:10.1007/s10846-008-9284-8

Peer-Reviewed International Conference Publications

[9] Visakha Nanayakkara, Ahmad Ataka, Demetrios Venetsanos, Olga Duran, **Nikolaos Vitzilaios**, Thrishantha Nanayakkara, and Necip Sahinkaya. Kinematic Analysis of the Human Thumb with Foldable Palm. In: *17th Towards Autonomous Robotic Systems (TAROS-16)*, Sheffield, UK, June 28–30, 2016. doi:10.1007/978-3-319-40379-3_23

[10] Jessica Alvarenga, **Nikolaos I. Vitzilaios**, Kimon P. Valavanis, and Matthew J. Rutherford. Scaled Control Performance Benchmarks and Maneuvers for Small-Scale Unmanned Helicopters. In: *54th IEEE Conference on Decision and Control (CDC)*, Osaka, Japan, December 15–18, 2015. doi:10.1109/CDC.2015.7403168

[11] Konstantinos Kanistras, Pranith Chander Saka, Kimon P. Valavanis, **Nikolaos I. Vitzilaios**, and Matthew J. Rutherford. Low Speed Wind Tunnel Investigation of a Circulation Control Wing for Enhanced Lift. In: *AIAA Aviation Conference*, Dallas, TX, USA, June 22–26, 2015. doi:10.2514/6.2015-2575

[12] Stephen Conyers, **Nikolaos Vitzilaios**, Matthew Rutherford, and Kimon Valavanis. A Mobile Self-Leveling Landing Platform for the Extended Operation of Autonomous UAVs in Remote Locations. In: *2015 IEEE International Conference on Robotics & Automation (ICRA)*, Seattle, WA, USA, May 26–30, 2015. doi:10.1109/ICRA.2015.7139272

[13] Adriano Bittar, **Nikolaos I. Vitzilaios**, Matthew J. Rutherford, and Kimon P. Valavanis. An Integrated Framework for Cooperative Ground and Aerial Vehicles Missions Utilizing Matlab and X-Plane. In: *2015 IEEE International Systems Conference (SysCon)*, Vancouver, BC, Canada, April 13–16, 2015. doi:10.1109/SYSCON.2015.7116800

[14] Konstantinos Kanistras, Saka Pranith Chander, Kimon P. Valavanis, **Nikolaos Vitzilaios**, and Matthew J. Rutherford. Design and Development of an Air Supply Unit for Circulation Control Wing-Based UAVs. In: *Proceedings of the IEEE Aerospace Conference*, Big Sky, MT, USA, March 7–14, 2015. doi:10.1109/AERO.2015.7119204

[15] Florence M. Mbithi, **Nikolaos I. Vitzilaios**, Matthew J. Rutherford, and Kimon P. Valavanis. A novel propulsion system for unmanned underwater vehicles. In: *Proceedings of the 2014 International Conference on Intelligent Unmanned Systems (ICIUS 2014)*, Montreal, QC, Canada, Sept. 29–Oct. 1, 2014.

[16] Konstantinos Kanistras, Matthew Rutherford, **Nikolaos Vitzilaios**, and Kimon Valavanis. Experimental Study of Circulation Control Wings at Low Reynolds Numbers. In: *32nd AIAA Applied Aerodynamics Conference, AIAA Aviation and Aeronautics Forum and Exposition*, Atlanta, GA, USA, June 16–20, 2014. doi:10.2514/6.2014-2307

[17] Bryan Godbolt, **Nikolaos Vitzilaios**, Chris Bergen, and Alan F. Lynch. Experimental Validation of a Helicopter Autopilot: Time-Varying Trajectory. In: *Proceedings of the 2013 International Conference on Unmanned Aircraft Systems (ICUAS 13)*, Atlanta, GA, USA, May 28–31, 2013. doi:10.1109/ICUAS.2013.6564713

[18] Bryan Godbolt, **Nikolaos I. Vitzilaios**, and Alan F. Lynch. Design and Validation of a Helicopter UAV Autopilot. In: *Proceedings of the 2012 International Conference on Unmanned Aircraft Systems (ICUAS 12)*, Philadelphia, PA, USA, June 12–15, 2012.

[19] Diomidis Katzourakis, **Nikos I. Vitzilaios**, and Nikos C. Tsourveloudis. Vision Aided Navigation for Unmanned Helicopters. In: *Proceedings of the 17th IEEE Mediterranean Conference on Control and Automation (MED 2009)*, Thessaloniki, Greece, June 24–26, 2009. doi:10.1109/MED.2009.5164717

[20] **Nikos I. Vitzilaios**, and Nikos C. Tsourveloudis. Altitude Control of Small Helicopters Using a Prototype Test Bed. In: *Proceedings of the 5th International Conference on Informatics in Control, Automation and Robotics (ICINCO 2008)*, Madeira, Portugal, May 11–15, 2008.

INVITED CONFERENCE PUBLICATIONS

[21] **Nikos I. Vitzilaios**, and Nikos C. Tsourveloudis. UAS for Fire Management: State-of-the-art, Early Warning and Trends. In: *Workshop on UAS Civilian Applications: Fire Detection, Forest Protection, Emergency Response, 17th IEEE Mediterranean Conference on Control and Automation (MED 2009)*, Thessaloniki, Greece, June 2009.

[22] N. Tsourveloudis, P. Spanoudakis, V. Kanakakis, and **N. Vitzilaios**. Testing for Better Design: The Case of KRISSALOS Unmanned Surface Vehicle. In: *Workshop on Good Experimental Methodology and Benchmarking in Robotics & Research & Applications, EURON 2009*, Leuven, Belgium, April 2009.

[23] **Nikos I. Vitzilaios**, and Nikos C. Tsourveloudis. Test Bed for Unmanned Helicopters' Performance Evaluation and Benchmarking. In: *Workshop on Performance Evaluation and Benchmarking for Intelligent Robots and Systems, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2008)*, Nice, France, September 2008.

TECHNICAL REPORTS

[24] Konstantinos Kanistras, Saka Pranith Chander, Kimon P. Valavanis, **Nikolaos I. Vitzilaios**, and Matthew J. Rutherford. Plenum Design for Circulation Control Wings. In: *DU2SRI-2014-10-001*, University of Denver Unmanned Systems Research Institute, October 2014.

[25] Jessica Alvarenga, **Nikolaos I. Vitzilaios**, Kimon P. Valavanis, and Matthew J. Rutherford. Survey of Rotorcraft Navigation and Control. In: *DU2SRI-2014-04-001*, University of Denver Unmanned Systems Research Institute, April 2014.

[26] Romeo Tatsambon Fomena, **Nikos I. Vitzilaios**, and Alan F. Lynch. Determining Moments of Inertia of MiniTitan and Bergen Helicopters Using the Trifilar Pendulum Method. In: University of Alberta, Applied Nonlinear Controls Lab, June 2012.

PEER-REVIEWED GREEK CONFERENCE PUBLICATIONS

[27] Diomidis Katzourakis, **Nikos Vitzilaios**, and Nikos Tsourveloudis. Object Recognition for Aiding Unmanned Helicopters Flight. In: *2nd Hellenic Robotics Conference*, Patras, Greece, December 2010. In Greek.

[28] **Nikos Vitzilaios**, and Nikos Tsourveloudis. Autonomous Navigation for Unmanned Helicopters. In: *1st Hellenic Robotics Conference*, Athens, Greece, February 2009. In Greek.

INVITED TALKS

[29] **Nikos I. Vitzilaios**. Invited Lecture - Tutorial in Unmanned Aircraft Systems, *Unmanned Aerial Systems Workshop*, CMANTIC Lab, Department of Computer Science, University of Nebraska-Omaha, NE, USA. August 12-13, 2013.

TUTORIALS

[30] Jessica Alvarenga, **Nikos Vitzilaios**, Matt Rutherford, Kimon Valavanis. Navigation and Control of Unmanned Rotorcraft: A Comprehensive Approach, Tutorial-3 (T3), *2014 International Conference on Unmanned Aircraft Systems (ICUAS 14)*, Orlando, FL, USA. May 27, 2014.

[31] Jessica Alvarenga, Konstantinos Kanistras, **Nikos Vitzilaios**, Matt Rutherford, Kimon Valavanis. *Unmanned Aircraft Systems Technology Overview Short Course*, University of Denver Unmanned Systems Research Institute, Front Range Airport, CO, USA. September 5, 2013.

PATENTS

[32] Stephen A. Conyers, **Nikos Vitzilaios**, Matthew J. Rutherford, and Kimon P. Valavanis. Provisional Patent: A Mobile Self-Leveling Landing Platform for Small-Scale UAVs. U.S. Patent Application Serial Number 62/014,892, United States Patent and Trademark Office, June 20, 2014.