

CURRICULUM VITAE

Dr. Ing. Prof. KIMON P. VALAVANIS

Fellow, American Association for the Advancement of Science (AAAS)

PROFESSOR AND CHAIR

Electrical & Computer Engineering

Director, DU Unmanned Systems Research Institute (DU²SRI)

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International Conference on Unmanned Aircraft Systems (ICUAS) Association, Inc.

President and Founder, Member of the Advisory Committee

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CAREER OBJECTIVES

To seek challenging positions in the Engineering domain that require educational, research and development, leadership, entrepreneurial, organizational and managerial skills. To lead and enhance University Departments and Colleges, Research and Development Centers, and develop interdisciplinary programs emphasizing research cooperation and collaboration between academe, government and industry, facilitating technology transfer from the laboratories to the market. To lead in establishing the 21st Century University that will produce graduates with breadth and depth of knowledge, and with entrepreneurial skills. To seek challenging research and management positions in nationally/internationally recognized industrial/federal research and development centers. To establish high-tech startup companies to develop and market novel and cost-effective solutions for unmanned systems applications, and automation.

Curriculum Vitae Outline

PART I:	Professional Bio (Summary)
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Last Updated, December, 2012

Kimón P. Valavanís, Vitae

PART I

Professional Biography - Summary

Dr. **Kimón P. Valavanis** received the Diploma in Electrical and Electronic Engineering (5 years of study) from the National Technical University of Athens (<http://www.ntua.gr>), Greece, in 1981, and he completed the Professional Engineer (PE) exams in Electrical and Mechanical Engineering in February 1982. He has been a member of the Technical Chamber of Greece since 1982. He received the M.Sc. degree in Electrical Engineering and the PhD degree in Computer and Systems Engineering from Rensselaer Polytechnic Institute (RPI) (<http://www.renselaer.edu>) in 1984 and 1986, respectively.

From 1987 to 1990 he held the Analog Devices Career Development Chair for Assistant Professors in the Department of Electrical and Computer Engineering (ECE), Northeastern University (<http://www.northeastern.edu>), Boston, where he was also Director of the Robotics Laboratory. From 1991 to 1999 he was with The Center for Advanced Computer Studies (CACs), University of Louisiana at Lafayette (<http://www.cacs.louisiana.edu>), where he served as Associate Professor (1991-1995) and since 1995 as Professor of Computer Engineering. He was also Associate Director for Research at the A-CIM Center (1993-1999) and Director of the Robotics and Automation Laboratory. He also held the A-CIM/[TC]²/Regents Professorship in Manufacturing.

From 1999-2003, he was Professor in the Department of Production Engineering and Management (DPEM), Technical University of Crete (TUC) (<http://www.tuc.gr>), Greece, where he also established and served as Founding Director of the Intelligent Systems and Robotics Laboratory (ISRL). He was also Director of the DPEM Graduate Program and Chair of the TUC Industrial Advisory Board (IAB) and Technical Council.

From August 2003-August 2008 he was Professor in the Department of Computer Science and Engineering (CSE), University of South Florida (<http://www.cse.usf.edu>), where he also served as Deputy Director of the Center for Robot-Assisted Search and Rescue (CRASAR) until the summer of 2005. In late 2005, he established the Unmanned Systems Laboratory (USL) in the College of Engineering, in which he served as Founding Director. He was also the Managing Director of the National Institute for Applied Computational Intelligence (NIACI) and a Faculty Associate at the Center for Urban Transportation Research (CUTR). From 2004-3/2006, he was also the Managing Director of the American Foundation for Greek Language and Culture, AFGLC (<http://www.afglc.org>).

He joined the University of Denver on September 1, 2008, as Professor and Chair of the ECE Department. After serving as Chair for three years, he was renewed for a second three year period, effective September 1, 2011. He also served as Interim/Acting Chair of the Computer Science (CS) Department for two years (7/2009 to 6/2011). He is also the Founding Director of the DU Unmanned Systems Laboratory (DU²SL), which he established in early 2009. In November of 2012, he officially established the DU Unmanned Systems Research Institute (DU²SRI), in which he serves as Founding Director. One of the objectives of the Institute is to coordinate efforts with interested parties (State, industry and private sector) within the State of Colorado in an attempt to make Colorado one of the six Unmanned Aircraft Systems (UAS) sites.

Further, since the middle 1990's, he has been Guest Professor in the Faculty of Electrical Engineering and Computing, Department of Telecommunications, University of Zagreb (<http://www.fer.hr>), Croatia. He was also invited through the *European Union PhD Research Program in Italy* to teach Robotics and Unmanned Systems at the Dipartimento di Ingegneria Informatica, Gestionale e dell' Automazione, Università Politecnica delle Marche, Ancona, Italy.

As Chair of the ECE Department at DU he initiated, led and coordinated the effort to create a new undergraduate program in Mechatronic Systems Engineering (MSE) leading to a BS-MSE degree, and a new PhD program in MSE. Currently DU is the only University in the U.S. offering BS-MSE, MS and

PhD degrees in MSE. The new BS-MSE program was mentioned as a ‘major strength’ during the 2010 ABET visit and in the final ABET report received in August 2011. Further, he led and coordinated the effort to create a new concentration at the undergraduate and graduate level in Electric Power and Energy Systems, focusing on Renewable Energy and the SmartGrid. In his capacity as Chair (Interim Chair) of ECE (CS), he led and coordinated efforts to establish ‘by default’ minors for Computer Science students in Computer Engineering and for Computer Engineering students in Computer Science. He strengthened relations among the two Departments and collaboration among faculty, recommending joint/courtesy appointments – this was also mentioned as a major strength in the 2010 ABET visit and, afterwards, in the final report. As Chair of the ECE he also focused on improving research and on increasing funding by providing faculty the needed leadership, encouragement and support infrastructure to facilitate their efforts. Funding was increased from about \$500K total in late 2008 to a total of \$8.2M by September 1, 2012.

Dr. Valavanis’ responsibilities as Department Chair include: strategic planning and future planning for academic/departmental needs; budget management; distribution/allocation of available resources and other facilities; recommendations to hire faculty, lecturers and adjunct faculty; recommendations for tenure and/or promotion; faculty/staff evaluations; looking for multidisciplinary inter-departmental and multi-university research opportunities; innovations in education, and faculty engagement with IAB members. A major focus of his efforts has been to establish international collaborations between ECE and other Universities outside the U.S. However, the most important responsibility has been to provide a friendly working environment and facilitate and support faculty members, support students and continuously enhance and improve education and research.

During his Academic career thus far, Dr. Valavanis has graduated 30 PhD students and more than 80 MS students. He has attracted more than \$30M in research funds from Federal and State agencies, industry and the private sector; while in Europe, he was funded by the Greek Secretariat of Research and Technology, the European Union, industry, and from the Croatian Ministry of Science and Technology (joint projects).

Dr. Valavanis' research interests are focused in the areas of Unmanned Systems, Distributed Intelligence Systems, Robotics and Automation. He has published over 350 book chapters, technical journal/transaction, referred conference papers, invited papers and technical reports. He has authored, co-authored and/or edited the following books: Intelligent Robotic Systems: Theory, Design and Applications (with Dr. G. N. Saridis), Kluwer Academic Publishers, 1992; Control Problems in Robotics and Automation (co-editors with B. Siciliano), *Lecture Notes in Control and Information Sciences*, Vol. 230, Springer-Verlag, 1998; Intelligent Manufacturing Systems: Programming and Control (with J. Balic, N. Tsourveloudis and S. Ioannidis), University of Maribor Publications, 2003; Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy (editor and co-author of nine Chapters), Springer, 2007; Unmanned Aircraft Systems - International Symposium on Unmanned Aerial Vehicles, UAV'08, (co-editors with P. Oh and L. A. Piegl), Springer 2009; On Integrating Unmanned Aircraft Systems into the National Airspace System: Issues, Challenges, Operational Restrictions, Certification, and Recommendations (with K. Dalamagkidis and L. A. Piegl), Springer 2009, with a 2nd Edition published in 2012; Intelligent Control Applications to Engineering Systems (editor) Springer, 2009; Unmanned Aircraft Systems – 2nd International Symposium on Unmanned Aerial Vehicles, UAV'09 (co-editors with R. Beard, P. Oh, A. Ollero, L. Piegl, H. D. Shim), Springer, 2010; Unmanned Aerial Vehicles (editor), Springer, 2011; Linear and Nonlinear Control of Small Scale Unmanned Rotorcraft (I. A. Raptis, K. P. Valavanis), Springer, 2012; Recent Developments in Unmanned Systems (editor), Springer, 2012; Unmanned Aircraft Systems: Challenges and state of the art (editor), Springer, 2013. His most recent book project, to be completed in late 2013, is the Handbook of Unmanned Aerial Vehicles (UAVs), with emphasis on: UAV History and Fundamentals, UAV Technologies, UAV Integration into the National Airspace, Applications, Who is Who in UAVs, Future Trends (K. P. Valavanis, G. J. Vachtsevanos), to be published by Springer. In addition, he is the co-author (with G. Atsalakis and K. Zopounidis) of the book Stock Market Forecasting Techniques (in Greek), Klidarithmos, 2008. He also holds several patents.

Dr. Valavanis has organized two International Advanced Robotics Programme (IARP) meetings in Lisbon, Portugal, and Lafayette, LA, which were funded by the National Science Foundation. He has taught Tutorial Workshops at the IEEE CDC, ACC, and ICRA, Conference on Telecommunications (ConTel) and the Mediterranean Conference in Control and Automation. He served as Associate Editor of the IEEE Transactions in Robotics and Automation from 2/1996-2/1999, as the Robotics and Automation Society “Discrete Event Dynamic Systems Technical Committee” co-Chair for two years, and as an Associate Editor of the IEEE Robotics and Automation Society Magazine from 1994 to 1995. He was Editor-in-chief of the same Magazine for ten years (1996-2005). He was also the Book Review Editor of the Journal of Intelligent and Robotic Systems (JINT) until 2006, and since then, he serves as the Editor-in-Chief of JINT. He serves on the Editorial Advisory Board of the International Series on Microprocessor Based and Intelligent Systems Engineering Series published by Springer. He also served as a member of the IEEE Robotics and Automation Society Awards Committee for three years, and as co-chair/chair of the Aerial Robotics and Unmanned Aerial Vehicles Technical Committee (2008-2012).

Dr. Valavanis has also received invitations by the *Hellenic Quality Assurance Agency* (H.Q.A.A.) for Higher Education of the Hellenic Republic to evaluate Greek Universities (ABET Evaluation), and by the *European Union* to be an evaluator of IP and STREP projects as part of the *7th European Union (EU) Framework Programme for Research and Technology Development (FP7) – Information and Communication Technologies (ICT-2009.2.1 Cognitive Systems and Robotics)*, and he also served as a member of the Hearing Committee panel in Luxemburg. He is an appointed *Scientific Project Reviewer* in projects financed by the *Ministry of Science, Education and Sports of the Republic of Croatia* and in research projects evaluated by the *Italian Evaluation of Research Quality exercise (VQR 2004-2010)*.

Dr. Valavanis has been on the organizing committee of many conferences, serving as General, Program, Registration, Local Arrangements Chair, including: Registration Chair of the 36th IEEE CDC; Local Arrangements Chair of the 34th IEEE CDC; General Chair (with F. Lewis) of the 11th Mediterranean Conference on Control and Automation, June 2003; Program Chair of the 2004 IEEE ICRA; General Chair (with P. Antsaklis) of the 15th Mediterranean Conference on Control and Automation, June 2007; General Chair (with W. Gruver) of the IEEE SMC International Conference on Distributed Human-Machine Systems, March 2008; General Chair of the 2011 IEEE Multi-Conference on Systems and Control, September, 2011; General Chair (with P. Antsaklis) of the 21st Mediterranean Conference on Control and Automation, June 2013. He has also served as General Chair of the International Conference on Unmanned Aircraft Systems (ICUAS), which he created in 2008. In 1998, he was elected as Vice President – Administration of the IEEE Mediterranean Control Association (MCA). He was a Distinguished Speaker in the IEEE Robotics and Automation Society (- 2003), a Senior Member of IEEE and a Fellow of the American Association for the Advancement of Science. He is also a Fulbright Scholar.

PART II

EDUCATION

- **Rensselaer Polytechnic Institute (RPI)** Troy, NY
PhD, Computer and Systems Engineering, 1986.
M.Sc., Electrical Engineering, 1984.
- **National Technical University of Athens (NTUA)** Greece
Diploma in Electrical Engineering (5 years of study); minor in Electronic Engineering and Electric Power Systems, 1981.
- **Registered Electrical/Mechanical Engineer (PE)**, Technical Chamber of Greece (March 1982).
- **Languages:** English, French, Greek (native).

RESEARCH INTERESTS

Renewable Energy Systems - Applications

- Smart Grid; integration, monitoring, integrated control and diagnostics, trustworthiness, security.

Unmanned Systems

- Designing and building a next generation Class I unmanned rotorcraft;
- Unmanned Aircraft Systems (UAS) integration into the National Airspace System (NAS): safety levels, risk analysis, reliability assessment, classification and certification procedures;
- Nonlinear control of UAVs;
- See-and-avoid / sense-and avoid systems for UAVs;
- Information/sensor fusion, sensor based control of UAS, Autonomous Underwater Vehicles (AUVs), Unmanned Ground Vehicles (UGVs);
- Emergency landing navigation controllers for unmanned rotorcraft: autonomous autorotation / running landing, vision-based guided running landing;
- Guidance, navigation, control and collision avoidance of unmanned systems;
- Parameter identification, estimation, modeling, control of small scale unmanned rotorcraft;
- Integrated Control & Diagnostics; Hardware/Software -in-the-loop verification and validation;
- Swarm Formation Control and coordination of UGVs, UAS and UGV-UAS teams;
- UGV-based take off/landing platforms for unmanned helicopter launch and recovery on the move;
- FPGA-based, X-MOS technology based autopilot/microcontroller designs, suitable for across unmanned platform designs;
- Integrating and prototyping multi-mission/special purpose unmanned helicopters;
- Energy / power optimization for unmanned systems.

Distributed Intelligence Systems

- Mathematical modeling, control and coordination, integrated control and diagnostics, computational complexity, decision making, performance evaluation of distributed / robotic systems and random topology and complexity production systems;
- Control, coordination and performance evaluation of network controlled distributed systems;
- Petri Net / Hybrid Petri Net / Modular Petri Net Theory and Applications;
- Generalized System Theory.

Applications

- Networks and Telecommunication Systems; Wireless Sensor Networks;
- Discrete Event Dynamic Systems, FMS, CIM Systems, Power Systems;
- C⁴I system performance evaluation;
- Manufacturing agility metrics and performance evaluation;
- Distributed networked virtual reality and multimedia applications for multi-user environments (functional-, interconnection-, agent- based models, QoS evaluation);

- Machine Vision (color image enhancement, noise removal, segmentation, classification);
- Unmanned vehicle based traffic monitoring and emergency response;
- Modeling, analysis and prediction of traffic patterns based on statistical profiles derived from UAS-based real-time video data;
- Sensor based navigation of skid steering mobile robots;
- Cooperation and coordination of robots treated as mobile, autonomous agents;
- Virtual environment based modeling, control and simulation of robotic manipulators, mobile robots, UAS, AUV, UGV, and CIM systems.

HONORS & AWARDS

- Fellow, AAAS:** Elected Fellow of the *American Association for the Advancement of Science* in November of 2009.
- Fulbright Scholar:** *Senior Lecturing & Research Award* (2001), Faculty of Electrical Engineering and Computing, Department of Telecommunications, University of Zagreb, Croatia.
- July 1998 – 2003:** *Distinguished Lecturer*, IEEE Robotics and Automation Society.
- Since 11/1995:** *Life Member, Upsilon Pi Epsilon (YIIE) - the International Honor Society for the Computing Sciences.*
- 1994 – 08/2000:** *A-CIM/[TC]²/BORSF Regents Professor in Manufacturing*, University of Louisiana at Lafayette (UL at Lafayette), USA.
- 1987-1990:** *Analog Devices Career Development Chair for Assistant Professors*, Dept. of Electrical and Computer Engineering, Northeastern University, Boston.

Biography Listings

- Marquis *Who's Who in the Media and Communications*, 1st Edition, New Providence, NJ07974.
- Marquis *Who's Who in the World*, 12th Edition, New Providence, NJ 07974.
- Marquis *Who's Who in America*, 48th Edition, New Providence, NJ 07974.
- *Dictionary of International Biography*, 23rd Edition, International Biographical Centre, Cambridge CB2, 3QP, England.
- Marquis *Who's Who in Science and Engineering*, 2nd Edition, Reed Reference Publishing, Wilmette, Illinois 60091.
- *Men of Achievement*, 16th Edition, International Biographical Centre, Cambridge CB2, 3QP, England.

PATENTS

- **Provisional Patent through DU:** “*Radar-Based Detection and Identification for Miniature Air Vehicles*”, U.S. Patent Application Number 61/478,681, Filed April 25, 2011.
- **Provisional Patent through DU:** “*Intelligent Self-Leveling Nodal and Docking System*”, EFS ID: 8798032, Application Number: 61411635, International Application Number: N/A, Confirmation Number: 1639. [*Full patent also filed through DU.*]
- **In Greece:** “*Design of Autonomous Navigation System for UAVs*”; Patent number 1004873, International Classification G01C 21/34, G08G 5/04. Approved: April 2005. [Complete system with a PCB board, controller, interfaces, microprocessors, converters, sensors, for plug-in, -out missions.]

PROFESSIONAL EXPERIENCE

GUEST/ADJUNCT/SABBATICAL/VISITING PROFESSOR POSITIONS

May-June '04: *Visiting Professor; European Union PhD Research Program in Italy; Dipartimento di Ingegneria Informatica, Gestionale e dell' Automazione, Università Politecnica delle Marche, Ancona, Italy.*

Sabbatical, '03: Visiting Professor, Computer Science and Engineering, Center for Robot Assisted Search and Rescue, University of South Florida, Tampa, FL.

Since 12/1997: Guest Professor, Faculty of Electrical Engineering and Computing, Department of Telecommunications, University of Zagreb, Croatia.

FACULTY & ADMINISTRATIVE POSITIONS

Since 9/1/2008: Professor and Chair, Department of Electrical and Computer Engineering, University of Denver.

- Dean's Strategic Planning Committee
- Dean's New SECS Building Committee
- Founding Director, *DU Unmanned Systems Research Institute (DU²SRI)*
- Founding Director, *DU Unmanned Systems Laboratory (DU²SL)*
- Graduate Program Coordinator
- Member, DU Internationalization Committee / International Council
- Member, DU Research, SPARC Committee
- Member, DU Technology Incubator Committee

Since 9/2011: Courtesy Professor, Department of Computer Science, University of Denver

7/1/2009-6/2011: Professor and Interim Chair, Department of Computer Science, University of Denver.

8/2003-8/2008: Professor, Computer Science and Engineering, University of South Florida.

- Director, *Unmanned Systems Laboratory*, 2006 – August 2008.
- Faculty Associate, Center for Urban Transportation Research (CUTR).
- Faculty Associate, Clean Energy Research Center (CERC).
- Managing Director, National Institute for Applied Computational Intelligence (NIACI), 2006-May 2008.
- Deputy Director, *Center for Robot Assisted Search and Rescue (CRASAR)*, August 2003 - summer 2005.

1999-2003: Professor, Director, Laboratory of Intelligent Systems and Robotics, Department of Production Engineering & Management, Technical University of Crete, Chania, Greece.

- Director, *Graduate Studies*, Department of Production Engineering & Management, Technical University of Crete.
- Chair, University Technical Council, Technical University of Crete.

July 1995 – 1999: Professor and Graduate Faculty of Computer Engineering, Center for Advanced Computer Studies (CACs), UL at Lafayette.

1995 – 1998: Associate Director for Research, Apparel-Computer Integrated Manufacturing Center, UL at Lafayette.

1993 –10/1995: Associate Director for Research in Robotics and Automation, Apparel Computer Integrated Manufacturing Center, UL at Lafayette.

1991 – 1995: Associate Professor and Graduate Faculty of Computer Engineering, Center for Advanced Computer Studies (CACs), UL at Lafayette.

1986 – 1990: Assistant Professor and Director, Robotics Laboratory, Department of Electrical and Computer Engineering, Northeastern University.

1987 – 1990: National Technological University (NTU) Instructor (through the Northeastern University TV network), Boulder, Colorado.

1982 – 1985: Research Associate and Teaching Assistant at the Robotics and Automation Laboratory, Department of Electrical, Computer, and Systems Engineering, Rensselaer Polytechnic Institute, Troy NY.

1975 – 1981: Instructor, Learning Centers, Athens, Greece.

EXECUTIVE BOARD & MEMBER POSITIONS

- **2012:** *President*, ICUAS Association, Inc. (non-profit); <http://www.icuas.com>.
- **2012:** *Member (elected)*, American-Hellenic Educational Progressive Association (AHEPA) Board of Directors, Chapter 145, Denver, CO.
- **2010:** *Member*, AHEPA, Chapter 145, Denver CO.
- **2004 – 3/2006:** *Managing Director*, “American Foundation for Greek Language and Culture”, AFGLC, Tampa Office; <http://www.afglc.org>.

TECHNICAL AND CONSULTING EXPERIENCE

- **8/2012:** Founder and President of the International Conference on Unmanned Aircraft Systems (ICUAS) Association, Inc., a non-profit organization established to promote knowledge, education and research in the area of unmanned systems and to organize and sponsor the annual ICUAS meeting.
- **5/2010:** Founder, President and CEO of *KS&P Technologies, LLC*, www.ksp-technologies.com, a High-Tech startup company focusing developing cutting edge technologies in robotics and automation.
- **9/2007-12/2008:** Co-Founder, Managing Member and CTO of *Archytas Unmanned Systems, LLC* (<http://www.archytasus.com>).
- **March 2003 – March 2006:** Founder of a research consortium (from SBIR) to design and develop integrated controllers for autonomous navigation of unmanned vehicles. Responsible for technical agenda, technology transfer, intellectual rights, business plan. (Initial funding received from EU/Greek Secretariat for Research and Technology -GSRT).
- **1999 – 2003:** Consultant for EADS - 3SIGMA S. A. (former STN ATLAS-3SIGMA S. A.) Responsible for R&D division set up, management and activities coordination, new project initiatives and funding. Leader, company–TUC projects management. Duties included enhancing autonomous UAV performance, new VTOL design specifications and development, UAV jet engine design for enhanced performance. (**E**uropean **A**eronautics, **D**efense and **S**pace Company – EADS).
 - Participant with EADS - 3SIGMA S. A. in the WEAG (**W**estern **E**urope **A**rmament **G**roup) meetings for establishing civilian UAV specifications.
 - Participant with EADS - 3SIGMA S. A. and speaker in the EURO UVS (**U**nmanne**D** **V**ehicle **S**ystems).
- **1997-2001:** Consultant, Ericsson - Nikola Tesla, Croatia, (through the University of Zagreb). Networked virtual reality environments, simulation, and QoS specifications.
- **1987-1989:** Consultant and co-founder, GNOSITEK INC., Boston, MA: Consulting in design of robotic and automation systems; Development of total solution robotic systems for specific applications (package handling, distribution, palletizing); Robot market analysis; New product development and marketing.
- **1981- Present:** Consultant of Private Companies, Athens, Greece: Consulting in manufacturing systems, automation, robotics, technology transfer, production planning and management, start-up companies and economic development.

UNIVERSITY AND DEPARTMENT ADMINISTRATIVE EXPERIENCE

UNIVERSITY OF DENVER

- *Member*, DU International Council / Internationalization committee
- *Member*, DU Sponsored Programs and Academic Research Committee (SPARC)
- *Member*, University committee to establish policies for admitting graduate students who have

- completed three-year undergraduate degrees (as per the *Bologna Agreement*).
- *Member*, DU Technology Incubator Committee

ELECTRICAL AND COMPUTER ENGINEERING DEPARTMENT

- *Since 9/1/2008 – Chair*
 - ✚ Completed successfully ABET in October of 2010. Positive observations/comments on the strengths of the (enhanced) undergraduate common curriculum, the Mechatronic Systems Engineering (MSE) concentration (new) and the collaboration between CS and CpE.
 - ✚ Created a new undergraduate program in MSE; it is a concentration leading to a BSEE-MSE degree.
 - ✚ Established a new PhD program in Mechatronic Systems Engineering (MSE), which started on September 1, 2010. (Note: DU is the only University in the U.S. that offers BS-MSE, M.Sc., and PhD degrees in MSE!)
 - ✚ Established a new PhD in ECE, effective September 1, 2010.
 - ✚ Completed enhancements in undergraduate curricula to include courses in Business Law, Engineering Entrepreneurship, Technology Transfer, Patents & IP Rights, and Ethics throughout the curriculum.
 - ✚ Created a new focus area in Electric Power and Energy Systems at the undergraduate and graduate levels focusing on renewable energy systems, sustainability, SmartGrid optimization and security.
 - ✚ Evaluated all PhD degree programs and recommended changes to the Qualifying Exams to reflect breadth/ depth of knowledge in core, two area-specific and research specialization areas.
 - ✚ Created and established the undergraduate Control Systems Laboratory (for educational purposes, coupled with teaching analog, digital and adaptive control), and the Unmanned Systems Laboratory (for research purposes).
 - ✚ Improved computational facilities within ECE.
 - ✚ Initiated closer collaboration with the Industrial Advisory Board (IAB) members and industry.
 - ✚ Coordinating multidisciplinary/interdisciplinary research initiatives between Universities.
 - ✚ Research funding increased from \$500K total in 2008 to \$5.2M in 2011. Number of submitted proposals also increased accordingly.
 - ✚ Graduate student numbers increased by 45% in 2009, then stabilized.
 - ✚ *DU²SL*: Supervising / co-supervising a team of about 15 students.

COMPUTER SCIENCE DEPARTMENT

- *7/1/2009 – 6/2011 Interim Chair*. Focused on:
 - Evaluating CS Department status, reviewing budget, degrees, programs and research focus areas.
 - Close collaboration with the CS Industrial Advisory Board (IAB) to enhance undergraduate and graduate curricula to reflect and account for recent changes and advancements in the field.
 - Establishing common course thematic sequences between CS and Computer Engineering (CpE).
 - Promoting multidisciplinary/interdisciplinary research initiatives to attract funding.
 - Recruitment of good quality students.

UNIVERSITY OF SOUTH FLORIDA (SEPTEMBER 2003 – AUGUST 2008)

College of Engineering

- *August 2004-2008*: Member, University Research Misconduct Committee (College of Engineering, COE, representative).
- *August 2004-2007*: Member, University Research Council – Representative, COE.

Department of Computer Science and Engineering

- Director, Unmanned Systems Laboratory, 2006 – August 2008;
- Managing Director, National Institute for Applied Computational Intelligence;
- Deputy Director, CRASAR (and chief financial officer summer 2003 - summer 2005);
 - Responsible for project management, research agenda development, human resources management, raising sustainable funding, budget allocation and related issues, acting as the liaison person to industry, Local, State and Federal authorities. Number of employees – on average – 20 PhD candidate students, 5 undergraduate students, 10 affiliated faculty members, two Visiting Faculty / Researchers, 2 Research Scientists.
- Chair, Infrastructure Committee, 2007 – 2008;
- Chair, Faculty Evaluation Committee, 2005-2007;
- Chair, Awards Committee, 2004-2005;
- Member, Faculty Search Committee, 2004-2005;
- Member, CSE Infrastructure Committee, 2003-2004, 2005-2007;
- Member, CSE Graduate Studies Committee, 2003-2004;
- Member, Tenure and Promotion (T&P) Committee, 2003-2008.

TECHNICAL UNIVERSITY OF CRETE (1999-AUGUST 2003)

- Chair, University Technical Council (the council that coordinates, approves and monitors campus-building improvements, new buildings, university property investments, etc., in cooperation with the City authorities, Ministry of Education, and reports to the University Senate).
- Director, Department Graduate Studies (responsible for the modernization and improvement of the graduate studies in view of the new rules and regulations imposed by the European Union). Developed and introduced an enhanced graduate curriculum that became effective in the 2002-2003 Academic Year.
- Member, Curriculum Development Committee
- Chair and Member, Tenure and Promotion (T&P) Committee.
- Member of Greek Universities T&P committees (external evaluator).
- Member of hiring recommendations and evaluation committee.

UNIVERSITY OF LOUISIANA AT LAFAYETTE (1990-1998)

- Member CACS Governing Board (1997-1998).
- Chair, CACS Research Committee (1997-98).
- Member, Faculty Senate (1995 - 1998).
- A-CIM Associate Director for Research (1995-1998). Responsible for funding, projects management and coordination, liaison between University, Industry Federal and State Government (10 affiliated faculty members, 5 Research / Visiting Scientists, 20 graduate students, 1 technician, staff of 5).
- Member, University Academic Research Council (1996 -1997) – committee that recommended new potential research opportunities as well as key directions for overall University enhancement.
- Chair, Faculty Search Committee (1995 -97).
- Member, CACS Executive Committee (1995 - 97).
- Chair, CACS Ph.D. Qualifying Exams Committee (1992 -1996).

PROFESSIONAL SOCIETIES ADMINISTRATIVE EXPERIENCE

- 2008:** Created the *International Symposium on Unmanned Aerial Vehicles*, an annual conference with industrial, private sector, federal and state government, and

university participation. The meeting has been renamed *International Conference on Unmanned Aircraft Systems* (ICUAS), <http://www.uasconferences.com>. Springer has become Sponsor of ICUAS publishing a special Volume per year since 2008. ICUAS is sponsored by the ICUAS Association and by other professional societies.

- Since August 2006:** **Journal of Intelligent and Robotic Systems (published by Springer)**
Editor-in-Chief: Reorganized the journal: proposed enhanced scope to include Unmanned Systems; organized Journal after IEEE Transactions publications and Automatica; introduced new editorial board, introduced editorials, educational papers, emphasizing special issues; increased the number of issues from 12 to 16 per year, published in four volumes;
- 2006-12/2008** **IEEE Systems, Man and Cybernetics (SMC) Society**
Editor-in-Chief, IEEE SMC eNewsletter: responsible for editing, material collection, and layout, production and dissemination. Working with the SMC Board of Governors and Executive / Technical Committees.
- 2006-2010:** **IEEE Robotics and Automation Society (RAS)**
Co-Chair/Chair (2009) of the Aerial Robotics and Unmanned Aerial Vehicles Technical Committee.
- 2005-2009:** *Member,* IEEE Robotics and Automation Society Awards Committee.
- 1996-12/2005:** *Member,* Financial Activities Board.
Member, Publications Committee.
Editor-in-chief, IEEE RAS Magazine (two consecutive 5-year terms; stepped down, December 31, 2005).
- 2003:** *Member,* committee to create the new IEEE Transactions on Automation Sciences and Engineering (T-ASE).
- Since 1998:** **Mediterranean Control Association (MCA)**
Vice President, Administration
Member, MCA Board
Member, MCA conference steering committee

NATIONAL – INTERNATIONAL PANELS & COMMITTEES

- **2012:** Invited by the *Hellenic Quality Assurance Agency* (H.Q.A.A.) for Higher Education of the Hellenic Republic to evaluate the Department of Electrical & Electronic Engineering, Aristotle University, Thessaloniki, Greece, on March 19-23, 2012. [ABET Evaluation]
- **2011:** Invited by the *Hellenic Quality Assurance Agency* (H.Q.A.A.) for Higher Education of the Hellenic Republic to evaluate the Department of Electrical Engineering of the Technological Institute of Crete, Greece, on October 17-22, 2011. [ABET Evaluation]
- **2011:** European Union invitation to be an evaluator of IP and STREP projects in Brussels in March of 2011.
- **2010:** European Union: Evaluator of IP and STREP projects, *7th European Union (EU) Framework Programme for research and technology development (FP7) – Information and Communication Technologies (ICT-2009.2.1 Cognitive Systems and Robotics)*, Brussels. Member of

- the Hearing Committee panel, Luxembourg.
- **2010:** NSF evaluator and panelist, Expedition in Computing Program, April 5-7, 2010.
 - **2009:** *European Union:* Evaluator of IP projects, *7th European Union (EU) Framework Programme for research and technology development (FP7) – Information and Communication Technologies (ICT-2009.2.1 Cognitive Systems and Robotics)*, Brussels.
 - **Since 2006:** Appointed as *Scientific Project Reviewer* in the research evaluation process, financed by the *Ministry of Science, Education and Sports of the Republic of Croatia*.
 - **2001-2002:** (*In Greece*) *National Committee* for the evaluation of Greek University Engineering Programs. *Member*, evaluation committee of Greek Secretariat of Research and Technology (GSRT).
 - **1999:** NSF evaluator and panelist (SBIR/STTR) on Sensing and Control, Division of Design and Manufacturing, Directorate of Engineering.
 - **1994-1997:** *Member* (through the University of Louisiana A-CIM Center) of the *Defense Logistics Agency* of the Department of Defense (DLA / DOD) *Apparel Research Network (ARN)*.
 - **1994-1997:** *Committee Member*, DLA / DOD, *ARN Pre-production and Production Focus Group (PPFG)*. Objective: Develop a national road map for research projects relevant to the DLA ARN mission.
 - **1992:** NSF panel in Instrumentation for Research in Computer, Information Science and Engineering, Division of Cross Disciplinary Activities in the CISE Directorate, Washington D.C.

PART II

RESEARCH PUBLICATIONS

BOOKS AND EDITED BOOKS

1. K. P. Valavanis, G. J. Vachtsevanos (Editors), Handbook of Unmanned Aerial Vehicles (UAVs), with emphasis on: UAV History and Fundamentals, UAV Technologies, UAV Integration into the National Airspace, Applications, Who is who in UAVs, Future Trends, Springer (to be published in late 2013).
2. K. P. Valavanis (Editor), Unmanned Aircraft Systems: Challenges and state of the art, Springer, 2013.
3. K. P. Valavanis (Editor), Recent Developments in Unmanned Systems, Springer, 2012.
4. K. Dalamagkidis, K. P. Valavanis, L. A. Piegl, On Integrating Unmanned Aircraft Systems in to the National Airspace System: Issues, Challenges, Operational Restrictions, Certification, and Recommendations, *International Series on Intelligent Systems, Control and Automation: Science and Engineering*, Volume 54, Springer, 2nd Edition, 2012.
5. K. P. Valavanis (Editor), Unmanned Aerial Vehicles, Springer, 2011.
6. I. A. Raptis, K. P. Valavanis, Linear and Nonlinear Control of Small-Scale Unmanned Helicopters, *International Series on Intelligent Systems, Control and Automation: Science and Engineering*, Volume 45, Springer 2011.
7. K. P. Valavanis, R. Beard, P. Oh, A. Ollero, L. Piegl, H. D. Shim, Editors, Unmanned Aircraft Systems – 2nd International Symposium on Unmanned Aerial Vehicles, UAV'09, Springer, 2010.
8. K. P. Valavanis (Editor), Applications of Intelligent Control to Engineering Systems, *International Series on Intelligent Systems, Control and Automation: Science and Engineering*, Volume 39, Springer, 2009.
9. K. P. Valavanis, P. Oh, L. A. Piegl, Editors, Unmanned Aircraft Systems - International Symposium on Unmanned Aerial Vehicles, UAV'08, Springer, 2009.
10. K. Dalamagkidis, K. P. Valavanis, L. A. Piegl, On Integrating Unmanned Aircraft Systems in to the National Airspace System: Issues, Challenges, Operational Restrictions, Certification, and Recommendations, *International Series on Intelligent Systems, Control and Automation: Science and Engineering*, Volume 36, Springer, 2009.
11. G. Atsalakis, K. Valavanis, K. Zopounidis, Stock Market Forecasting Techniques (in Greek), Klidarithmos (ISBN 978-960-461-121-8), 2008.
12. K. P. Valavanis (Editor), Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy, *International Series on Intelligent Systems, Control and Automation: Science and Engineering*, Volume 33, Springer, 2007.
13. J. Balic, K. P. Valavanis, N. C. Tsourveloudis, E. Ioannidis, Intelligent Manufacturing Systems: Programming and Control, University of Maribor Publications, 2003.
14. B. Siciliano, K. P. Valavanis (Editors), Control Problems in Robotics and Automation, Lecture Notes in Control and Information Sciences, Vol. 230, Springer-Verlag, 1998.
15. K. P. Valavanis, G. N. Saridis, Intelligent Robotic Systems: Theory, Design and Applications, Kluwer Academic Publishers, 1992.

- PhD Thesis:** K. P. Valavanis, A Mathematical Formulation for the Analytical Design of Intelligent Machines, RPI, 1986.
- M.Sc. Thesis:** K. P. Valavanis, On the Real-time Control of a VAX-11/750 Computer Controlled PUMA-600 Robot Arm, RPI, 1984.
- Diploma Thesis:** K. P. Valavanis, Protection of Electric Power Transmission Lines with Digital Relays: An Algorithm for Short Circuit Detection, Identification and Isolation, National Technical University of Athens, 1981. (In Greek)

EDITED CONFERENCE PROCEEDINGS (SELECTIVE)

1. K. P. Valavanis, P. J. Antsaklis, Z. Kovacic, K. J. Kyriakopoulos, Proceedings of the 15th Mediterranean Conference on Control and Automation, (CD-ROM and Book of Abstracts), June 2007.
2. K. P. Valavanis, F. Lewis, S. Bogdan, K. J. Kyriakopoulos, Proceedings of the 11th Mediterranean Conference on Control and Automation, (CD-ROM and Book of Abstracts), June 2003.
3. K. P. Valavanis, D. Gracanin, M. Matijasevic, R. Kolluru, Proceedings of the 1st International Advanced Robotics Programme Workshop on Autonomous Underwater Vehicles for Shallow Water and Coastal Environments, University of Louisiana at Lafayette, April 1998.
4. K. P. Valavanis, F. L. Lewis, K. S. Barber, C. Abdallah, Proceedings of the 10th IEEE International Symposium on Intelligent Controls, Monterey, CA, IEEE Control Systems Society Press, August 1995.
5. K. P. Valavanis, G. N. Saridis, A. Pascoal, P. Lima, F. L. Pereira, Proceedings of the International Program Development in Undersea Robotics and Intelligent Control (URIC): A Joint U.S./Portugal Workshop, University of Louisiana at Lafayette, May 1995.
6. K. P. Valavanis, G. N. Saridis, F. Lewis, G. Stavrakakis, N. Koussoulas, K. Kyriakopoulos (Editors), Proceedings of the 2nd IEEE Mediterranean Symposium on New Directions in Control and Automation, Chania, Crete, June 1994.
7. M. A. Bayoumi, L. Davis, K. P. Valavanis (Editors), Proceedings of the Workshop on Computer Architectures for Machine Perception (CAMP'93), IEEE Computer Society Press, December 1993.
8. A. C. Sanderson, A. A. Desrochers, K. Valavanis (Editors), Proceedings Fourth IEEE International Symposium on Intelligent Controls, IEEE Computer Society Press, September 1989.

BOOK CHAPTERS

1. G. Limnaios, N. C. Tsourveloudis, K. P. Valavanis, book Chapter, *Introduction in Sense and Avoid in UAS: Research and Applications*, P. Angelov, Editor, J. Wiley, 2012.
2. G. Atsalakis, K. P. Valavanis, C. Zopounidis, D. Nezis, “*Time Series Based House Sale Value Market Forecasting Using Genetically Evolved Neural Networks*”, in J. Wang and S. Wang (Editors) Business Intelligence in Economic Forecasting: Technologies and Techniques, pp: 265-282, Information Science Reference, 2010.
3. R. Garcia, L. Barnes, K. P. Valavanis, *Design of a Hardware and Software Architecture for Unmanned Systems: A Modular Approach*, in K. P. Valavanis (Editor), Applications of Intelligent Control to Engineering Systems, ISCA, Volume 39, Springer, 2009.
4. M. Kontitsis, K. P. Valavanis, *Designing a Real-time Vision System for Small Unmanned Rotorcraft: A Minimal and Cost-effective Approach*, in K. P. Valavanis (Editor), Applications of Intelligent Control to Engineering Systems, ISCA, Volume 39, Springer, 2009.
5. A. Tsalatsanis, K. P. Valavanis, A. Yalcin, *UGV Localization Based on Fuzzy Logic and Extended Kalman Filtering*, in K. P. Valavanis (Editor), Applications of Intelligent Control to Engineering Systems, ISCA, Volume 39, Springer, 2009.
6. K. P. Valavanis, M. Kontitsis, *A Historical Perspective on Unmanned Aerial Vehicles*, in K. P. Valavanis (Editor), Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy, ISCA, Volume 33, Springer, 2007.
7. I. A. Raptis, K. P. Valavanis, *Airplane Basic Equations of Motion and Open-Loop Dynamics*, in K. P. Valavanis (Editor), Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy, ISCA, Volume 33, Springer, 2007.
8. M. Castillo-Effen, C. Castillo, W. Moreno, K. P. Valavanis, *Control Fundamentals of Small Helicopters: A Survey*, in K. P. Valavanis (Editor), Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy, ISCA, Volume 33, Springer, 2007.
9. W. Alvis, C. Castillo, M. Castillo-Effen, W. Moreno, K. P. Valavanis, *A Tutorial Approach to Small Unmanned Helicopter Controller Design for Non-aggressive Flights*, in K. P. Valavanis

- (Editor), Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy, ISCA, Volume 33, Springer, 2007.
10. I. K. Nikolos, N. C. Tsourveloudis, K. P. Valavanis, *Evolutionary Algorithm Based Path Planning for Multiple UAV Cooperation*, in K. P. Valavanis (Editor), Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy, ISCA, Volume 33, Springer, 2007.
 11. R. D. Garcia, K. P. Valavanis, *A Modular On-Board Processing System for Small Unmanned Vehicles*, in K. P. Valavanis (Editor), Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy, ISCA, Volume 33, Springer, 2007.
 12. K. P. Valavanis, G. J. Vachtsevanos, P. J. Antsaklis, *The Road Ahead*, in K. P. Valavanis (Editor), Advances in Unmanned Aerial Vehicles: State of the Art and the Road to Autonomy, ISCA, Volume 33, Springer, 2007.
 13. N. Tsourveloudis, L. Doitsidis, K. Valavanis, "Autonomous Navigation of Unmanned Vehicles: A Fuzzy Logic Perspective", Cutting Edge Robotics, pp: 291-310 (ISBN 3-386611-038-3), 2005.
 14. J. A. Katsigiannis, P. S. Georgilakis, A. T. Souflaris, K. P. Valavanis, "Diagnosing Transformer Faults with Petri Nets", Lecture Notes in Artificial Intelligence, Springer, Vol. LNAI 3025, pp. 420-431, May 2004. (Initially presented at the Third Hellenic Conference on Artificial Intelligence, Samos, Greece.)
 15. N. D. Hatzargyriou, N. A. Fountas, K. P. Valavanis, "Petri Net Models in the Restoration of Power Systems Following System Collapse", in C. T. Leondes (Editor) Knowledge Based Systems: Techniques and Applications, Vol. 4, pp: 1190-1223, Academic Press, 2001.
 16. S. R. Malladi, K. P. Valavanis, M. C. Mulder, "Control and Coordination of a Redundant Manipulator", in Intelligent Control Systems: Theory and Applications, pp: 702-731, M. M. Gupta and N. K. Sinha (Editors), IEEE Press, 1995.
 17. K. P. Valavanis, S. G. Tzafestas, "Expert Systems in Intelligent Robotics and Control", in Expert Systems in Engineering Applications, pp: 259-268, S. Tzafestas (Editor), Springer Verlag, 1993.
 18. A. I. Kokkinaki, K. P. Valavanis, S. Tzafestas, "A Survey of Expert System Tools and Engineering Based Expert Systems", in Expert Systems in Engineering Applications, pp: 367-378, S. Tzafestas (Editor), Springer Verlag, 1993.
 19. S. Tzafestas, A. I. Kokkinaki, K. P. Valavanis, "An Overview of Expert Systems", in Expert Systems in Engineering Applications, pp: 2-24, S. Tzafestas (Editor), Springer Verlag, 1993.
 20. K. P. Valavanis, C. A. Jacobson, "On the Four - Parameter Controller Based Manipulator Payload Variation Detection and Accommodation", in Applied Control, Current Trends and Modern Methodologies, pp: 595-637, S. Tzafestas (Editor), Marcel Dekker, 1993.
 21. G. Seetharaman, K. P. Valavanis, "Modeling of Multisensory Robotic Systems with Failure Diagnostic Capabilities", in An Introduction to Intelligent and Autonomous Control, pp: 349-369, P. J. Antsaklis and K. M. Passino (Editors), Kluwer Academic Publishers, 1993.
 22. K. P. Valavanis, G. N. Saridis, "Information Theoretic Modeling of Robotic and Automation Systems", in Control and Dynamic Systems; Manufacturing and Automation Systems: Techniques and Technologies, Part 4 of 5, Volume 48, pp: 387-416, C. T. Leondes (Editor), Academic Press, 1991.
 23. K. P. Valavanis, G. N. Saridis, "Knowledge Based Architectural Models for Intelligent Robotic Systems", in Advances in Automation and Robotics, Vol. 2, pp: 1-19, G. N. Saridis (Editor), JAI Press, 1991.
 24. K. P. Valavanis, "Theory and Design of Intelligent Robotic Systems", in Intelligent Robotic Systems, pp: 45-83, S. G. Tzafestas (Editor), Marcel Dekker, 1991.
 25. M. B. Leahy, Jr., K. P. Valavanis, "Dynamics Based Control of Robotic Manipulators", in Intelligent Robotic Systems, pp: 245-281, S. G. Tzafestas (Editor), Marcel Dekker, 1991.
 26. G. N. Saridis, K. P. Valavanis, "On the Real-Time Control of Intelligent Robotic Systems", in Digital Techniques in Simulation Communication and Control, pp: 463-469, S. G. Tzafestas (editor), Elsevier Science Publishers, B. V. (North Holland), IMACS, 1985. (Conference reprint paper.)

EDITORIALS / TECHNICAL INFORMATION ESSAYS

- Editorials 1/96-12/05:** 4 editorials per year for the *IEEE Robotics and Automation Magazine*.
1/06 – 12/08: 4 editorials per year for the *IEEE SMC eNewsletter*.
9/06 - : Monthly editorials, *Journal of Intelligent and Robotic Systems*.

Invited information Essays

- P. Spanoudakis, L. Doitsidis, N. C. Tsourveloudis, K. P. Valavanis, R. R. Murphy, “*New VTOL Design*”, *Unmanned Systems*, Vol. 21, No. 5, page 20, September/October 2003.
- K. P. Valavanis, “*Controlling Unmanned Swarms*”, *Unmanned Systems*, Vol. 21, No. 5, pp: 22-23, September / October 2003.

REFEREED SERIAL TRANSACTION/JOURNAL PAPERS

1. A. Moses, M. J. Rutherford, M. Kontitsis, K. P. Valavanis, *UAV-borne X-band Radar for MAV Collision Avoidance*, *Robotica* (Revised, under review).
2. A. Elkady, J. Joy, T. Sobh, K. Valavanis, “*Modular Design: A Plug and Play Approach to Sensory Modules, Actuation Platforms, and Task Descriptions for Robotics and Automation Applications*” *IEEE Transactions on Systems, Man and Cybernetics, Part C* (Under review).
3. A. Elkady, J. Joy, T. Sobh, K. Valavanis, “*A Structured Approach for Modular Design in Robotics and Automation Environments*”, *Journal of Intelligent and Robotic Systems* (Accepted, in Print).
4. I. A. Raptis, K. P. Valavanis, G. J. Vachtsevanos, *Linear Tracking Control for Small-Scale Unmanned Helicopters*, *IEEE Transactions on Control Systems Technology*, Vol. 20, No. 4, pp: 995-1010, July 2012.
5. Goncalo Martins, Allistair Moses, Matt Rutherford, Kimon Valavanis, *Enabling Intelligent Unmanned Vehicles through XMOS Technology*, *Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, Vol. 9 No 1, pp: 71-82, January 2012.
6. K. Dalamagkidis, K. P. Valavanis, L. A. Piegl, “*Nonlinear Model Predictive Control with Neural Network Optimization for Autonomous Autorotation of Small Unmanned Helicopters*”, *IEEE Transactions on Control Systems Technology*, Vol. 19, No. 4, pp: 818-831, July 2011.
7. I. A. Raptis, K. P. Valavanis, W. Moreno, “*A Novel Nonlinear Backstepping Controller Design for Helicopters Using the Rotation Matrix*”, *IEEE Transactions on Control Systems Technology*, Vol. 19, No. 2, pp: 465-473, March 2011.
8. A. Tsalatsanis, A. Yalcin, and K. P. Valavanis, “*Dynamic Task Allocation in Cooperative Robot Teams: A Limited Lookahead Control Policy*”, *Robotica*, doi: 10.1017/S0263574711000920, published on line August 17, 2011.
9. M. H. Mahoor, R. Godzdanter, K. Dalamagkidis, K. P. Valavanis, “*Vision-Based Landing of Light Weight Unmanned Helicopters on a Smart Landing Platform*”, *Journal of Intelligent and Robotic Systems*, Special Issue on UAVs, Vol. 61, No. 1-4, pp: 251-265, March 2011.
10. G. Atsalakis, K. Valavanis, “*Surveying Stock Market Forecasting Techniques – Part I: Conventional Methods*” *Journal of Computation Optimization in Economics and Finance*, Vol. 2, No. 1, 2010.
11. G. Atsalakis, K. Valavanis, “*Forecasting Stock Trends Using a Combined Technical Analysis and Neuro-Fuzzy Based Approach*, *Journal of Financial Decision Making*, Vol. 6, No. 1, pp: 79-94, 2010.
12. L. E. Barnes, M. A. Fields, K. P. Valavanis, “*Swarm Formation Control Utilizing Elliptical Surfaces and Limiting Functions*”, *IEEE Transactions on Systems, Man and Cybernetics, Part B*, Vol. 39, No. 6, pp:1434-1445, December 2009.
13. A. Monteriù, P. Asthana, K. P. Valavanis and S. Longhi, “*Real-Time Model-Based Fault Detection and Isolation for UGVs*”, *Journal of Intelligent and Robotic Systems*, Vol. 56, No. 4, pp: 425-439, November 2009.
14. I. Raptis, K. P. Valavanis, A. Kandel, W. Moreno, “*System Identification for a Miniature Helicopter*

- at Hover Using Fuzzy Models”, Journal of Intelligent and Robotic Systems, Vol. 56, No. 3, pp: 345-362, October 2009.
15. L. A. Piegl, K. Rajab, V. Smarodzinava, K. P. Valavanis, “Using a Biarc Filter to Compute Curvature Extremes of NURBS Curves”, Engineering with Computers (Springer), Vol. 25, No. 4, pp: 379-387, 2009.
 16. I. Raptis, K. P. Valavanis, W. Moreno, “System Identification and Discrete Nonlinear Control of Miniature Helicopters Using Backstepping”, Journal of Intelligent and Robotic Systems, Vol. 55, No. 2-3, pp: 223-243, July 2009.
 17. L. A. Piegl, K. Rajab, V. Smarodzinava, K. P. Valavanis, “Fault-tolerant Computing in a Knowledge-Guided NURBS Environment”, Computer-Aided Design and Applications, 6(6), pp: 809-823, 2009.
 18. G. Atsalakis, K. P. Valavanis, “Forecasting Stock Market Short-Term Trends Using a Neuro-Fuzzy Based Methodology”, Expert Systems with Applications, Vol. 36, Issue 7, pp: 10696-10707, September 2009.
 19. G. Atsalakis, K. Valavanis, “Surveying Stock Market Forecasting Techniques – Part II: Soft Computing Methods”, Expert Systems with Applications, Vol. 36, Issue 3, pp: 5932-5941, 2009.
 20. R. D. Garcia, K. P. Valavanis, “The Implementation of an Autonomous Helicopter Testbed”, Journal of Intelligent and Robotic Systems, Vol. 54, No. 1-3, pp: 423-454, March 2009 – also published as a Book Chapter.
 21. K. Dalamagkidis, K. P. Valavanis, L. A. Piegl, “On Unmanned Aircraft Systems Issues, Challenges and Operational Restrictions Preventing Integration into the National Airspace System”, Progress in Aerospace Sciences, Elsevier, 44 (2008), pp: 503-519.
 22. S. Ioannou, K. Dalamagkidis, K. P. Valavanis, E. K. Stefanakos, P. H. Wiley, “Improving Endurance and Range of a UGV with a Gimbaled Landing Platform for Small Unmanned VTOL Vehicles”, Journal of Intelligent and Robotic Systems, Vol. 53, No. 4, 399-416, December 2008.
 23. K. Dalamagkidis, K. P. Valavanis, L. A. Piegl, “Current Status and Future Perspectives for Unmanned Aircraft System Operations in the US”, Journal of Intelligent and Robotic Systems, Vol. 52, No. 2, pp: 313-327, June 2008.
 24. M. Castillo-Effen, K. P. Valavanis, W. A. Moreno, M. A. Labrador, “Adapting Sequential Monte-Carlo Estimation to Cooperative Localization in Wireless Sensor Networks”, International Journal of Ad Hoc & Sensor Wireless Networks, Vol. 5, No. 1-2, pp: 27-46, 2008.
 25. D. Ernst, K. Valavanis, J. Craighead, “Unmanned Vehicle Controller Design, Evaluation and Implementation: From MATLAB to Printed Circuit Board”, Journal of Intelligent and Robotic Systems, Vol. 49, No. 1, pp: 85-108, May 2007.
 26. L. Barnes, W. Alvis, M. Fields, K. Valavanis, W. Moreno, “Heterogeneous Swarm Formation Control with Potential Fields Formed by Bivariate Normal Functions” International Journal on Systems Science and Applications, Vol. 2, No. 4, pp: 346-359, February 2007.
 27. A. Tsalatsanis, K. Valavanis, N. Tsourveloudis, “Mobile Robot Navigation Using Sonar and Range Measurements from Uncalibrated Cameras”, Journal of Intelligent and Robotic Systems, Vol. 48, No. 2, pp: 253-284, February 2007.
 28. A. Tsalatsanis, K. Valavanis, A. Yalcin, *Vision Based Target Tracking and Collision Avoidance for Mobile Robots*, Journal of Intelligent and Robotic Systems, Vol. 48, No. 2, pp: 285-304, February 2007.
 29. R. Garcia, K. P. Valavanis, “Improving and Miniaturizing an On-board Processing System for Small Unmanned Vehicles”, Unmanned Systems, Vol. 24, No. 5, pp: 36-39, September / October 2006 (Invited).
 30. C. L. Castillo, W. Alvis, M. Castillo-Effen, W. Moreno, K. Valavanis, “Small Unmanned Helicopter Simplified and Decentralized Optimization-based Controller Design for Non-aggressive Flights”, International Journal on Systems Science and Applications International Journal on Systems Science and Applications, Vol. 1, No. 3 pp: 303-315, 2006.
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- Architecture Integrated with a MATLAB Based Control Theoretic Environment: A Case Study of Fuzzy Logic Based Robot Navigation*", IEEE Robotics and Automation Magazine, Vol. 13, No. 3, pp: 93-107, September 2006.
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 36. M. Kontitsis, R. Garcia, K. Valavanis, "Design, Implementation and Testing of a Vision System for Small Unmanned Vertical Take-off and Landing Vehicles with Strict Payload Limitations", Journal of Intelligent and Robotic Systems, Vol. 44, No. 2, pp: 139-159, October 2005.
 37. G. J. Tsinarakis, K. P. Valavanis, N. C. Tsourveloudis, "Modular Petri Net Based Modeling, Analysis, Synthesis and Performance Evaluation of Random topology Production Systems" Journal of Intelligent Manufacturing Systems, 16, 67-92, 2005.
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 40. I. K. Nikolos, K. P. Valavanis, N. C. Tsourveloudis, A. N. Kostaras, "3-D Evolutionary Algorithm Based Off-line / On-line Path Planner for UAV Navigation", IEEE Transactions on System, Man and Cybernetics, Part B, Vol. 33, No. 6, pp: 898-912, December 2003.
 41. J. Aekaterinidis, K. Kostoulakis, L. Doitsidis, K. P. Valavanis, N. C. Tsourveloudis, "An Interface System for Real-Time Mobile Robot Environment Mapping using Sonar Sensors," WSEAS Transactions on Systems, Vol. 4, No. 2, pp. 927-933, October 2003.
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- Environments Using Electrostatic Potential Fields*", IEEE Transactions on Systems, Man and Cybernetics, Vol. 30, No. 2, Part A, pp: 187-196, March 2000.
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- Communication – control of swarms of ground robots: cooperation and collaboration in the presence of communication failures;

- Simulation and visualization environments for robot controller testing and multiple vehicle coordination;
- Parameter identification and estimation for derivation of accurate models of miniature unmanned VTOL vehicles;
- Intelligent sensors;
- Design of autonomous computer-controllers for UAV and VTOL vehicles;
- Energy efficient robot systems;
- Fault tolerance and integrated control and diagnostics for unmanned vehicles;
- Petri Nets and their applications to hybrid systems, production systems and electric power systems.

1999 – 2003: Technical University of Crete (All funded projects)

- Modeling, real-time, sensor-based control and autonomous navigation with collision avoidance of unmanned aerial vehicles (UAV). Enhancement of flying and operational capabilities.
- Built a custom made mobile robot.
- VTOL design specifications and control architecture.
- Flight simulator environment with multiple UAV / VTOL capabilities and interface with controllers.
- Autonomous, fuzzy-logic based navigation including collision avoidance of Underwater Vehicles.
- Developing a modular hardware and software control architecture for UAV “plug-in” missions.
- Designing a cost-effective small jet engine for UAVs.
- Coordinated sensor-based control and navigation of a fleet of skid-steering mobile robots in indoor and outdoor dynamic environments including moving obstacles.
- Modeling, analysis and synthesis of generic manufacturing cells (assembly, disassembly and production line) for production systems (CIM, FMS) control and performance evaluation based on maximization of throughput and minimization of work-in-process (WIP). A fuzzy logic perspective.
- Petri Net based system modeling and control. Applications in CIM systems, FMS, Electric Power Systems (reliability study, failures, diagnostics).
- Reliability and Performance Evaluation of Electric Power Systems.

1997- 2001: Research project collaboration with the Department of Telecommunications, University of Zagreb, and Ericsson – Nikola Tesla, Croatia.

- Agent-based modeling of distributed intelligence systems: mobile / intelligent agents for computer communication networks.
- Development of a formal model of a Networked Virtual Reality service. VR and multimedia based simulation and performance evaluation of distributed systems.
- Theoretical studies and experimental verification of flexible call and service processing models. Definition of application/user level Quality of Service (QoS) requirements and measurements.

1991-1999: Research Projects, University of Louisiana at Lafayette: Robotics and Automation Laboratory (RAL) and Virtual Reality and Multimedia Laboratory (VRML)

I. Distributed and Hierarchical Systems Modeling, Analysis, Synthesis and Performance Evaluation; System Error Identification and Recovery; Planning and Scheduling of Discrete Event Dynamic Systems

- Algorithms and grammars for integrated control and diagnostics of dynamic systems (automated manufacturing systems, DEDES, robotic assemblies), including fault or error or failure detection, identification, handling, accommodation and recovery. Petri Net models for integrated control and diagnostics of dynamic systems.
- Modeling and scheduling of planning systems based on multi agent coordination, collaboration and group theory. Integration with error recovery mechanisms.
- Petri Net based modeling, simulation and control of asynchronous concurrent systems, more

specifically discrete event dynamic systems (DEDS), which include Flexible Manufacturing Systems (FMS), computer systems, communication protocols, etc.

- Developed several classes of Petri Nets (like Hierarchical Time-Extended Petri Nets, H-EPNs, Parameterized Petri Nets, PPNs) for the hierarchical decomposition and composition of complex systems. Automated Petri Net based techniques for synthesis of complex dynamic systems.

II. Multi-system Coordination and Control

- Supervisory Control: Design of a three level software and hardware architecture (supervisory controller) for real-time control of an integrated work cell consisting of several robot arms, sensors, conveyors and mobile platforms.
- Simultaneous motion control of multiple robot systems: Utilizing coordinated control methods to coordinate the motion of robot arms (PUMA, AdeptOne and AdeptThree) in an overlapping workspace environment, avoiding collisions.

III. Robotics, Mobile Robotics, Underwater Vehicles and Computer Vision

- Robot parameter identification and derivation of simplified dynamic models for real-time control of PUMA and AdeptOne / AdeptThree robots
- Identification of AdeptOne / AdeptThree joint and link parameters using least squares curve fitting algorithms to derive simplified dynamic models for real-time sensor-based control. Testing and Implementation of PID Controllers.
- Integration of add-on modules (suction unit controllers, reconfigurable grippers, real-time bi-directional adjustable speed conveyor belt controllers) with the original AdeptOne and AdeptThree robot controllers.
- Designed special purpose fixed size and reconfigurable grippers to handle (pick and place) limp material without any deformation and/or distortion. Building and testing of prototypes.
- Designed efficient fuzzy logic based controllers for suction generation, regulation and coordination of fixed size and reconfigurable robotic grippers.
- Vision-based robot control system for handling moving objects on a variable speed conveyor belt. Utilizing the Adept Vision systems to derive parameters and features of objects to assist in training and recognition.
- Derived algorithms based on artificial potential field theory (potential panel methods) for mobile robot navigation in 2-D and 3-D environments in the presence of obstacles.
- Derived algorithms using Electrostatic Potential Fields for mobile robot navigation in 2-D dynamic environments (with arbitrarily moving obstacles).
- Derived and implemented a combined Electrostatic Potential Field / Two layer Fuzzy Logic Inference Engine Controller for mobile robot navigation in 2-D dynamic environments (with arbitrarily moving obstacles).
- Mobile robot navigation in 2-D dynamic environments (with arbitrarily moving obstacles) using Neural Networks.
- Sonar sensor based mobile robot navigation and environment mapping.
- Developed algorithms using multiple Total Color Difference (TCD) measures and thresholds for object identification. This measure considers both luminance and chrominance variations for object recognition.
- Developed a color visual monitoring system for image segmentation and classification based on color texture. Applications include wetlands monitoring and underwater robotics.
- Derived techniques and methods to solve problems related to object recognition and obstacle avoidance in domains like wetlands, shallow water fisheries, and deep-water polluted environments.
- Derived new sensor-based, modular hybrid control architecture (using QNX, STD-32 STAR) to replace the original Phantom S2 ROV controller. Converting the ROV to an AUV. Tested fuzzy

- logic based control techniques for ROV/AUV navigation.
- Mobile and autonomous agent based modeling of robotic fleets: cooperation and coordination issues.

IV. Interactive Graphical Simulation (Virtual Reality and Multimedia) Applications

- Utilized and developed interactive graphical simulation tools for visualization of various systems to facilitate analysis and design.
- Integrated Virtual Reality, Robotics and Multimedia technologies for research projects in Telerobotics, Telepresence, Teleoperation, and Virtual Manufacturing.
- Virtual reality based navigation of underwater vehicles.
- Distributed networked virtual reality and multimedia applications for multi user environments: Case studies in mobile robotics and underwater vehicles.

Other Completed Research Projects (1991 – 94)

- Established the Robotics and Automation Laboratory (RAL) within CACS.
- Developed the research agenda in robotics and automation at the A-CIM Center.
- Developed algorithms for planning and scheduling in automated manufacturing systems.
- Built an integrated CIM and Apparel - CIM work cell environment.
- Automated color defect recognition and identification in fabric material.
- Analysis, synthesis, diagnostics and control of automated manufacturing systems using hierarchical, timed extended Petri nets (H-EPNs) and Parameterized Petri nets (PPNs).
- Established the Intelligent Robotic Systems Laboratory (IRSL) at CACS.
- Designed a hybrid range - intensity sensor with error detection and recovery capabilities for introspective vision.
- Designed architecture for multisensory robotic systems.
- Sensor based control and coordination of redundant appendages based on composite (time and energy) performance measures.
- Modeled and simulated intelligent material handling systems.
- Noise removal techniques from color images (median filters, median vector filters, median type filters, and other nonlinear filters).
- Hierarchical planning and scheduling in robotic systems, assemblies and flexible manufacturing systems with parameterized Petri nets (PPNs).
- Manipulator payload sensitivity analysis and design of robust robotic controllers using the 4 - parameter controller approach. Stability analysis of manipulators with PD/PID controllers.

1986 – 1990: COMPLETED RESEARCH PROJECTS WHILE AT NORTHEASTERN UNIVERSITY

- Modeled the organization level of intelligent robotic systems using Expert System techniques. Developed an Expert System in Turbo Pascal.
- Modeled and simulated the performance of Flexible Manufacturing Systems using the Theory of extended Petri nets. Developed a simulation software package in Turbo Prolog.
- Interfaced an IVS-100, Analog Devices Vision System with a 3600 Symbolics Lisp Machine, to develop a high-level 3-D vision system.
- Interfaced a PUMA-260 robot arm MARK-II Series, with a MICRO VAX-II computer for real-time closed loop manipulator control.
- Completed Research Projects January, 1982 - December 1985
- Completed the doctoral research in the area of hierarchically intelligent control systems. Developed a mathematical formulation for the analytical design of autonomous intelligent machines operating in uncertain environments (Ph.D. Thesis).
- Supervised a team project related to the study of the dynamics of a PUMA-600 arm to define the

dominant terms governing the performance of each individual joint.

- Static friction and coupling effects were considered, and different control algorithms tested in real-time.
- Compared the performance of different approaches to Qualitative Physics Theories.
- Developed a Computer controlled robotic system for real-time control of general-purpose manipulators, by interfacing a Unimation PUMA-600 robot arm to a VAX-11/750 computer, via a modified arm controller. Implemented and tested various control algorithms in real-time.
- Developed the software for an Expert System on the IBM-3033 (MTS) computer for troubleshooting the Unimation PUMA-600 robot arm.
- Operated Computer Aided Control System Design (CACSD) packages. Designed controls for several multivariable control systems.

PART III

FUNDING RECORD

SINCE SEPTEMBER 1, 2008 (DU)

Submitted – Still under review

1. *CSR: Large: Dependable Hybrid Control for Distributed Cooperative Systems in Uncertain Environments*, submitted to NSF. Joint proposal with the University of Notre Dame. Total amount requested: \$1,892,749; Amount to DU (sub-contract): \$795,000; (PI/PD).
2. *Application of Structural Health Monitoring on Robotic Flying Vehicles*, submitted to NSF. Joint proposal with the California State University in Los Angeles. Amount to DU (sub-contact): \$625,000.00; (PI/PD).
3. A Novel Smart Grid Paradigm with Data-Driven Modeling, Optimization, Control and Diagnosis, submitted to NSF. Requested amount: \$580,014.00; (Co-PI).

Funded

1. *MRI Collaborative: An Integrated, Intelligent, Autonomous Unmanned Mobile Sensor*, National Science Foundation, August 1, 2012 – August 31, 2015: Total Award Amount: DU: 2,645,350, CSULA: \$500,000; Matching Funds: \$706,000. (PI/PD)
2. *A Framework for Developing a Campus-Wide SmartGrid*, Interdisciplinary Research Initiative, University of Denver; Amount \$60,000 (12 months), (PI/PD).
3. *A Miniature Smart Sense-and-avoid RADAR Sensor System*, PROFESSOR Research Initiative, University of Denver; Amount \$29,512 (12 months) (Co-PI).
4. *Embedded Mission Management Research Project*, Raytheon Company; Amount: \$65,000; Period 7 months (from effective date: 2011-05-15) (PI).
5. *DU SmartGrid Research and Development Project*, Funded by the University of Denver; Amount: \$50,000; Period: 3 months (effective date: 2011-06-01) (PI).
6. *MRI Development: Heterogeneous, Autonomic Wireless Control Networks for Scalable Cyber-Physical Systems*, NSF; Amount: \$2,211,778; Period: 8/1/09-7/31/12 (Co-PI).
7. *Collaborative Research: I/UCRC for Safety, Security and Rescue*, NSF; Award Amount: \$500,890 (\$275K from NSF, \$55K per year for 5 years, 1 year at a time, \$225,890 in cost sharing); Period Covered: 5 Years, effective August 1 2009. (Co-PI).
8. *Collaborative Research: I/UCRC: Safety Security Rescue Research Center (SSR-RC)*, National Science Foundation (NSF), *Transfer Grant Amount: \$129,365.00*. Period: 9/1/8008-7/31/2010.

JUNE 2003 – AUGUST 2008 (USF)

1. “*National Institute for Systems Testing and Productivity of the National Institute for applied Computational Intelligence*”, Department of the Navy, SPAWAR, Contract N00039-06-C-0062, \$1,6M; 2006 – December 11, 2007 (Valavanis – lead PI). Projects funded:
 - a. “*An Integrated Autonomous Unmanned Aerial Vehicle – Unmanned Ground Vehicle System Applicable to Military and Civilian Domains*”
 - b. “*Swarm-Based Formation Control of Multiple, Networked and Heterogeneous Unmanned Ground - Aerial Vehicles*”
 - c. “*Communication System and Network Design for Unmanned Systems: A Feasibility Study for Autonomous Underwater Vehicles*”
2. “*Collaborative Autonomous Unmanned Aerial – Ground Vehicle Systems for Field Operations*”, Army Research Office Contract W911NF-06-1-0069; Phase I Funds: \$385,212.00 for 12 months (PI: Valavanis). Subsequent phases to follow in 2008.

3. *“Real-time Video Data Collection Using Small Unmanned Helicopters for Traffic Monitoring, Analysis, Evaluation, Management and Network Planning”*, \$100,000.00 for 8 months, Hillsborough County, Traffic Department, FL (Co-PI).
4. *“High power, inexpensive vision system for miniature helicopters for traffic monitoring and emergency response”*, submitted to the FL High Tech Corridor Program. \$99,500.00 for 12 months (PI: Valavanis).
5. *“An Automated VTOL-Based Traffic Management, Monitoring and Emergency Response System”*, funded by DOT through CUTR, \$189,976.00 for 12 months (PI: Valavanis, Co-PIs: Hagen, Murphy).
6. *“Heterogeneous Unmanned Aerial-Ground Vehicle Collaboration and Coordination: Distributed Autonomy, Decision Making and Fault Tolerance”*, ONR Grant N00014-04-1-0487, \$442,500.00, May 2004-July 2005 (PI: Valavanis Co-PI: Murphy).
7. *“A Visual Environment for Design, Development, Testing and Evaluation of Aerial Vehicle Integrated Control and Diagnostics”*, funded by ONR/CSS, \$85,000.00 for 7 months (PI: Murphy, Co-PI: Valavanis).
8. *“Naval Automation and Information Management Technology; Research Focus: Distributed Sensor Fusion, UAV-UGV Navigation and Control”*, ONR Grant N00014-03-01-786, \$1,050,000.00, May 2003-July 2004 (PI: Murphy, Co-PIs: Valavanis, and Labrador).

1999-2003: Technical University of Crete

1. *“Stability of Unmanned Vehicle Flights: Control Techniques and Choice of Optimal Characteristics”*, funded by the Greek Secretariat for Research and Technology through the EU Funds Forum 2000-2006; total amount 100,000.00 euros.
2. *“Complete study for automating the olive oil kernel production – A sensor based fuzzy logic perspective”*, \$180,000.00 for 18 months (early 2004).
3. *“Development of an Integrated Hardware System for Autonomous Navigation of Unmanned Vehicles”*, submitted with EADS-3SIGMA S. A. (SBIR). 01 PRAXE-132, amount: \$55,000.00 for 18 months (funded in 2003).
4. *“Modeling, Analysis, Synthesis and Performance Evaluation of Random Topology Production Systems with Petri Nets”*, submitted in collaboration with the University of Maribor, Slovenia. Amount \$13,000.00 for one year (funded in 2003).
5. *“Awareness and Dissemination Activities for Advanced Control in Europe”* (ADACIE), IST-01-7-2B, Programme: IST, total amount: 196,600.00 €; TUC portion 24,000.00 €. (PI/PD: Prof. Pedro Albertos, Polytechnic University of Valencia, one of the Co-PIs, Prof. Kimon Valavanis).
6. *“Development of an Integrated Airborne Fire Detection System”*, funded by the Greek Secretariat for research and Technology through the EU Funds Forum 2000-2006. Members: EADS-3 SIGMA, Technical University of Crete (TUC), National Technical University of Athens (NTUA). 18 months, \$160,000.00. (PI/PD)
7. *“Development of a VTOL Unmanned Aerial Vehicle”* – Phase I, funded by the Greek Secretariat for research and Technology through the EU Funds Forum 2000-2006. Members: EADS-ATLAS-3 SIGMA, Technical University of Crete (TUC). 6 months, \$40,000.00. (PI/PD)
8. *“Development of a Turbo-Jet Engine for an Unmanned Aerial Platform”* – Phase I funded by the Greek Secretariat for research and Technology through the EU Funds Forum 2000-2006. Members: EADS-3 SIGMA, Technical University of Crete, 6 months, \$40,000.00. (PI/PD)
9. *“Hierarchical Intelligent Control of Production Systems: A Fuzzy Logic Perspective”*, funded by the Greek Secretariat for research and Technology through the EU Bilateral Agreements Program Greece – Slovenia 2000-2002. Members: Technical University of Crete (TUC) and University of Maribor, 18 months \$15,000.00 each member.
10. *“Development of an Intelligent Autonomous Navigation System for Unmanned Aerial Vehicles”*,

funded by the Greek Secretariat for research and Technology through the EU Funds Forum 1994 - 1999, No. 99BE118. Members: STN ATLAS-3 SIGMA, Technical University of Crete (TUC), National Technical University of Athens (NTUA). 18 months \$210,000.00. (PI/PD)

11. “*Robust Methodologies for the Integration of a Fleet of Commercially Available Mobile Robots: Application to the Inspection and Security of Office Buildings*”, funded by the Greek Secretariat for research and Technology through the EU Funds Forum 1994 – 1999. Members: TUC, NTUA and U of Patras (UP). 18 months \$120,000.00. (TUC PI/PD)

1997-2001: In Collaboration with the Department of Telecommunications, University of Zagreb, Croatia

12. “*Call and Service Processing for Advanced Network Architectures*”, funded by the Croatian Ministry of Science and Technology, Project No. 036030. Phase I: 5/1997 - 8/2000, Phase II: 9/2000-12/2001.
13. “*Networked Virtual Reality*”, funded by Ericsson Nikola Tesla, Project No. R00101. Duration: 11/1999-10/2001

Other Funded Research Collaboration Projects with Greek Universities (role as Research Scientist) while being a faculty in the US (before 1999)

14. “*Improvement and Better Utilization of Transmission Lines of Electric Power Systems*”, funded by the Greek Secretariat for research and Technology through the EU Funds Forum 1994 – 1999 (1996 – 1998 – ΠΕΝΕΑ 1996). NTUA Division of Electric Power Systems.
15. “*Neuro - Fuzzy Robust Control of Intelligent Autonomous Robotic Systems*”, funded by the Greek Secretariat for research and Technology through the EU Funds Forum 1994 – 1999 (1996-98 - ΠΕΝΕΑ – 1996). NTUA, Division of CS.
16. “*Diagnosis and Identification of Failures in Industrial Systems with Hierarchical Extended Petri Nets*”, funded by the Greek Secretariat for research and Technology through the EU Funds Forum 1994 – 1999 (1996-98, ΠΕΝΕΑ – 1996). University of Patras, Dept. of ECE.

1991-1999: Funded projects while at the University of Louisiana at Lafayette

17. “*Intelligent Machines for the Job Floor*”, Board of Regents Support Fund (BORSF), Industrial Ties Research Subprogram (ITRS), \$475,000 (\$125K from the state, \$350K as matching funds) for three years, 1999-2002 (Co-PI).
18. “*Modeling, Design and Prototyping of a Multi-degree of Freedom Robotic Gripper System for Limp Material Manipulation*”, National Science Foundation (NSF DMII-9701533); amount \$189,720.00 for two years (1997-1999).
19. “*International Advanced Robotics Programme (IARP) Workshop on AUVs for Shallow Waters and Coastal Environments*”, National Science Foundation (BES-9712565); amount \$49,976 for one year (1997-1998).
20. “*Design and Development of Automated Storage and Retrieval System*”, Stuller Settings, Inc.; amount: \$180,000.00 for one year (1998).
21. “*Reconfigurable Robotic Grippers for Handling Limp Material: an Attempt to Automate the U.S. Apparel Industry*”, Louisiana Education Quality Support Fund (LEQSF), Industrial Ties Component; amount: \$230,000.00 for three years (1996-1999).
22. “*Demand Activated Manufacturing Architecture (DAMA) Center Research Project*”, Department of Energy, ORNL; amount \$619,714.54 for 2 years (1996-1998).
23. “*Object Identification, Classification and Avoidance in 3-D Underwater Automated Surveillance*”, National Science Foundation, (BES 95-06771); amount: \$270,717.00 for three years (1995-1998).

24. *“International Program Development in Undersea Robotics and Intelligent Controls: A Joint U.S./Portugal Effort”*, National Science Foundation (NSF, BES 94-15748); amount \$52,675 for one year (1994-95).
25. *“Establishment of an Apparel Research Network (ARN)”*, Defense Personnel Support Center (DPSC-FPCA-1, BAA 93-01) DLA/DOD; initial amount \$350,000.
26. *“Establishment of the Multimedia and Virtual Reality Laboratory”*, Louisiana Education Quality Support Fund Enhancement Component; amount \$150,000.00 for 1 year.
27. *“Design of a Flat Plate Gripper for Apparel”*, Textiles and Clothing Technology Corporation, [TC]²; \$75,000.00 for 6 months (1994).
28. *“A Dynamic Resource Allocation System”*, Defense Logistics Agency of the DOD, DLA/DOD, DLA 900-91-C-1482, Phase III; amount \$190,272.46 for 1.5 years (1992-94).
29. *“Modeling of Hierarchical Systems and FMSs with Extended Petri Nets”*, Louisiana Educational Quality Support Fund, (LEQSF) Research and Development Component, LEQSF (1991-1993) RD-A-40; amount: \$53,240 for 2 years (1991-1993).
30. *“Modeling and Analysis of Hierarchically Intelligent Systems with Self-Organizing and Diagnostic Intelligence Capabilities”*, Louisiana Educational Quality Support Fund, (LEQSF) Research and Development Component, LEQSF (1991-1994) RD-A-43; amount: \$104,769 for 3 years (1991-1994).
31. *“IRSL: Intelligent Robotic Systems Laboratory”*, Louisiana Educational Quality Support Fund (LEQSF), Enhancement Component, LEQSF (1991-1992)-ENH-106; amount: \$110,000 for one year (1991-1992).
- 35. *“Louisiana State Appropriated Funding”* for A-CIM; amount \$419,269 per year, every physical year (1993-1999). [**Total 6 years, approximately \$2,900,000.00.**]
36. *University of Louisiana at Lafayette Research and Scientific Support Fund*, Equipment Grant, amount \$69,500, 1997.
37. *University of Louisiana at Lafayette Grant: Robotics and Automation Laboratory (RAL) Equipment*, Enhancement Grant, January 1994, amount \$20,000.
38. *Apparel-CIM Center: RAL Equipment Grant (R-552)*, amount \$50,000, 1993.
39. *Establishment of the Robotics Laboratory at the Center for Advanced Computer Studies*”, UL at Lafayette, Recruitment Grant 1991; amount: \$60,000.00.

1986-1990 while at Northeastern University

40. *“The Establishment of the Robotics and Automation Laboratory at Northeastern University”*, Analog Devices Research Grant, 1987 - 1990; amount \$135,000.00 (PI/PD).
41. *Northeastern University Equipment Grant*, amount \$38,000, 1986.

PART IV

TEACHING EXPERIENCE: GRADUATE AND UNDERGRADUATE COURSES TAUGHT

INVITED SHORT COURSES TAUGHT

Dipartimento di Ingegneria Informatica, Gestionale e dell' Automazione, Università Politecnica delle Marche, Ancona, Italy

- “Unmanned Systems” (*a graduate level course offered to all PhD students in Italian Universities through the University of Ancona, College of Engineering*)
- “Mobile Robot Systems: Architectures and Control”, (taught in Bertinoro, Italy as part of the PhD summer school in robotics)

University of Zagreb (intensive, fast-track graduate courses)

- Agents and Agent Based Systems
- Petri Nets and Distributed Systems
- Concurrent Systems
- Digital Control (undergraduate)

IN UNIVERSITIES HOLDING TENURED POSITIONS

University of Denver

- Unmanned Aerial Systems (Taught at Lockheed Martin)
- Engineering Analysis and Topics / Advanced Engineering Mathematics
- Controls
- Adaptive and Optimal Control
- Advanced Robotics
- Digital Communications
- Digital Control
- Computer Networks

University of South Florida (Since Spring 2003)

- Introduction to Discrete Structures
- Computer System Design
- Advanced Robotics – New graduate course
- Applied Machine Intelligence (graduate) – New course
- Introduction to AI Robotics (graduate)

Technical University of Crete (1999-present)

- Reliability Theory
- Intelligent Control
- Mechatronics and Process Control
- Introduction to Robotics
- Applied Petri Nets (graduate)
- Advanced Robotics (graduate)

University of Louisiana at Lafayette and Northeastern (CACs, CS and ECE)

- Computer and Communication Networks
- Computer Systems Performance Evaluation
- Robotic and Automation Systems
- Robotic Vision and Sensors
- Special Topics in Machine Vision
- Special Topics in Robotics

- Intelligent Systems and Machines
- Artificial/Machine Intelligence
- Classical Control Theory
- Linear Systems Analysis (undergraduate)
- Digital Control Systems
- Stochastic Control Systems
- Computer Integrated Manufacturing Systems
- Digital Signal Processing
- Discrete Mathematics (undergraduate)

LIST OF GRADUATE & GRADUATED STUDENTS

CURRENT PHD CANDIDATES AT UNIVERSITY OF DENVER (DU)

Students who have completed their course requirements and they are working on their thesis dissertation:

1. Allistair Moses
2. Goncalo Martins
3. Nickolas Sawruk
4. Omar Zargelin

Students at the PhD level, with course and thesis requirement:

1. Kostas Kanistras
2. Jessica Alvarenga

GRADUATED STUDENTS WITH A PHD DEGREE IN THE U.S. (ALL YEARS) & CURRENT AFFILIATION

1. **Stephanie Ortiz** (Advisor, Kimon Valavanis). *Dissertation Title:* Feed Forward Neural Net Utilizing the Monte Carlo Method to Perform and Determine Pattern Recognition. Classified Thesis defended in October of 2012.
Current Affiliation: Senior Software Engineer, Lockheed Martin.
2. **Roy Godzdanker** (Advisor, Kimon Valavanis, Co-Advisor, Matthew J. Rutherford). *Dissertation Title:* An Integrated Platform to Increase the Range/Endurance of Unmanned Helicopters, 2011.
Current Affiliation: Electrical Engineering Contractor, Creation Technology, Denver, CO.
3. **Ioannis Raptis** (Advisor, Kimon Valavanis, Co-Advisor, Wilfrido Moreno). *Dissertation Title:* Nonlinear and Linear Controller Design for Unmanned Rotorcraft.
Current Affiliation: Assistant Professor, Department of ME, University of Massachusetts, Lowell.
4. **Kostas Dalamagkidis** (Advisor, Kimon Valavanis, Co-Advisor, Les Piegl). *Dissertation Title:* Autonomous Vertical Autorotation for Unmanned Rotorcraft.
Current Affiliation: Research Scientist, Institut für Informatik VI, Technische Universität München.
5. **Michael Kontitsis** (Advisor, Kimon Valavanis, Co-Advisor, Sudeep Sarkar). *Dissertation Title:* Design and Implementation of an Integrated Dynamic Vision System for Autonomous Systems Operating in Uncertain Domains.
Current Affiliation: Lecturer, Department of ECE, University of Denver.
6. **Stelios Ioannou** (Co-Advisors, Elias Stefanakos, Kimon Valavanis). *Dissertation Title:* Discrete Linear Constrained Multivariate Optimization for Power Sources of Mobile Systems.

Current Affiliation: Post-Doctoral Fellow, Unmanned Aerial Systems, Cyprus Institute.

7. **Carlos Castillo** (Co-Advisors, Wilfrido Moreno, Kimon Valavanis). *Dissertation Title:* Fault-Tolerant Adaptive Model Predictive Control Using Joint Estimation Kalman Filters for Small-Scale Helicopters.
Current Affiliation:
8. **Athanasios Tsalatsanis** (Co-advisors, Ali Yalcin, Kimon Valavanis). *Dissertation Title:* Control of Autonomous Robot Teams in Industrial Applications.
Current Affiliation: Assistant Professor, Division of Evidence-based Medicine, University of South Florida.
9. **Anuj Puri.** *Dissertation Title:* Statistical Profile Generation of Real-Time UAV-based Traffic Data.
Current Affiliation: Financial Analyst, HSBC (Awards: 2011 CEO Award, 2010 CRO Award, 2009 Business leadership medallion, HSBC North America).
10. **Namir Aldawoodi** (Co-advisors, Kimon Valavanis, Rafael Perez). *Dissertation Title:* An Approach to Designing an Unmanned Helicopter Autopilot Using Genetic Algorithms and Simulated Annealing.
Current Affiliation:
11. **Wendy Alvis** (Co-advisors, Wilfrido Moreno, Kimon Valavanis). *Dissertation Title:* Development of an FPGA Based Autopilot Hardware Platform for Research and Development of Autonomous Systems.
Current Affiliation: System Engineer, Honeywell Aerospace, Sarasota, Florida.
12. **Laura Barnes.** *Dissertation Title:* A Potential Field Based Formation Control Methodology for Robot Swarms.
Current Affiliation: Assistant Professor, Department of Systems and Information Engineering, University of Virginia.
13. **Richard Garcia.** *Dissertation Title:* Designing an Autonomous Helicopter Testbed: From Conception through Implementation.
Current Affiliation: Senior Research Engineer, Automation and Data Systems Division, Southwest Research Institute, San Antonio, Texas.
14. **Mauricio Castillo-Effen** (Co-advisors, Wilfrido Moreno, Kimon Valavanis). *Dissertation Title:* Cooperative Localization in Wireless Networked Systems.
Current Affiliation: R&D Engineer, GE Global Research, General Electric Company, Connecticut.
15. **Maja Matijasevic** (In collaboration with the University of Zagreb). *Dissertation Title:* Distributed Networked Multimedia and Virtual Reality Applications for Multi-User Environments.
Current Affiliation: Professor and Chair, Department of Telecommunications, University of Zagreb, Croatia.
16. **Timothy M. Hebert.** *Dissertation Title:* Navigation of an Autonomous Vehicle Using a Combined Electrostatic Potential Field / Fuzzy Inference Approach.
Current Affiliation:

17. **Christophe Veltsos.** *Dissertation Title:* Automated Petri Net Synthesis for the Modeling and Analysis of Complex Dynamic Systems.
Current Affiliation: Professor and Chair, Department of Computer and Information Sciences, Minnesota State University, Mankato.

18. **Georgios A. Demetriou.** *Dissertation Title:* A State Configured Hierarchical Architecture for the Control of an Autonomous Underwater Vehicle.
Current Affiliation: Assistant Professor, Department of Computer Science, Frederick University, Cyprus.

19. **Ramesh Kolluru.** *Dissertation Title:* Modeling, Design, Prototyping and Performance Evaluation of a Sensor-Based Robotic Gripper System for Automated Limp Material Handling.
Current Affiliation: Director, Center for Business and Information Technologies (CBIT), University of Louisiana at Lafayette; AAMA/BORSF Professorship in Manufacturing.

20. **George Paschos.** *Dissertation Title:* Color and Texture Based Image Analysis: Segmentation and Classification.
Current Affiliation:

21. **Yanjun Zhang.** *Dissertation Title:* Potential Based Panel Method for Robot Motion Planning.
Current Affiliation: Director of Software Development at Vivante Corporation, San Francisco, CA.

22. **Angelika I. Kokkinaki.** *Dissertation Title:* A Dynamic Planning System for Automated Manufacturing Environments.
Current Affiliation: Associate Professor, Department of Management and MIS, Intercollege, Nicosia, Cyprus, also, Faculteit der Economische Wetenschappen Erasmus Universiteit, Rotterdam, Netherlands.

23. **Denis Gracanin.** *Dissertation Title:* Fundamentals of Parameterized Petri Nets.
Current Affiliation: Associate Professor, Department of Computer Science, Virginia Tech.

24. **Srinivasan Ramaswamy.** *Dissertation Title:* Hierarchical Time - Extended Petri Nets (H-EPNs) for Integrated Control and Diagnostics of Multi Level Systems.
Current Affiliation: Professor and Chairperson, Department of Computer Science, University of Arkansas at Little Rock, and, Vice President, ABB, Bangalore, India.

25. **Srinivasa R. Malladi.** *Dissertation Title:* A Sensor-Based Path Planning Algorithm for Control and Coordination of Multi-jointed Robotic Appendages.
Current Affiliation: LSI Logic Corporation (last known). Inventor.

26. **Jue Zheng.** *Dissertation Title:* Smoothing and Segmentation of Color Images in Computer Vision.
Current Affiliation:

27. **Barry Gold.** *Engineering Degree Dissertation:* Aspects of Trajectory Tracking Control of a Robot Arm.
Current Affiliation:

28. **Stefan Surka.** *Engineering Degree Dissertation:* Extracting Linear Image Features Using Directional Neighborhood Operators.
Current Affiliation: Software Consultant, Technical Development Lead at IT and Software Engineering Industry, Boston, MA.

Advisor/Co-Advisor of Graduated Students with a PhD Degree while at TUC, Greece (1999-2003)

29. **George Atsalakis:** *Dissertation Title: Stock Market Forecasting Techniques—A Neuro-Fuzzy Perspective.*
Current Affiliation: Lecturer, Technical University of Crete.
30. **George Tsinarakis:** *Dissertation Title: Supervisory Control and Performance Evaluation of Random Topology Manufacturing Systems with Hybrid Petri Nets.*
Current Affiliation: Lecturer, Technical University of Crete.

GRADUATED M.SC. STUDENTS WITH THESIS, ALL UNIVERSITIES – SELECTIVE LIST

1. M. Kontitsis: *A Machine Vision System for Surveillance from Unmanned Aerial Systems.*
2. E. Theodorou: *A Survey of Methods for Robot and Robot Team Localization in Initially Unknown / Known Environments.*
3. L. Doitsidis: *Navigation and Control of Skid-steering Autonomous Mobile Robots with Diverse Sensors.*
4. G. Tsinarakis: *Modeling, Analysis, Synthesis and Performance Evaluation of Production Systems with Several Classes of Petri Nets.*
5. G. Tsakirooulos: *Modeling of Electric Power Systems with Petri Nets.*
6. Leyla Cahut: *Resolution-Based Environment Mapping Using Sonar Sensors*
7. Srinivas Ketha: *CAD/CAM Based Modeling, Analysis and Simulation of a Reconfigurable Robotic Gripper System*
8. Timothy Hebert: *Sensor - Based Control of a Robotic Gripper*
9. E. C. Sekhar: *Identification of Dynamic Parameters of AdeptOne Robot for Model-based Real-time Control*
10. Michael Talley: *Real-time Control of a Variable Speed Conveyor Belt for an Object Tracking Robotic System*
11. Anita Kishore: *A Graphical User Interface for Systems Modeling Using Colored Petri Nets*
12. G. A. Demetriou: *Simulation Studies of the RAL System with the SILMA Package*
13. Majid Altuwaijri: *Software for Image Processing Algorithms*
14. Thomas Larsson: *Stability Analysis of the PUMA-560 Robot Arm with PD and PID Controllers under Model Mismatch*
15. Harris Stellakis: *Fuzzy Logic Based Modeling of the Organization Level of Intelligent Robotic Systems*
16. Peter H. Yuan: *Design of an Intelligent Robotic System Organizer Via Expert System Techniques*
17. J. S. Ahuja: *Advanced Petri Net Techniques for the Comprehensive Modeling, Analysis and Simulation of Flexible Manufacturing Systems*
18. Socrates J. Carelo: *An Efficient Planning Technique for Robotic Systems*

PART V

INTERNATIONAL CONFERENCE CHAIR ACTIVITIES

- *General Chair* (with Dr. Panos Antsaklis), 21st Mediterranean Conference in Control and Automation, Chania, Crete, Greece, June 2013.
- *General Chair* (with P. Campoy), 2013 International Conference on Unmanned Aircraft Systems, Atlanta, GA, May 28-31, 2013.
- *EU/USA Liaison Chair*, 2012 IEEE Multi Systems Conference, September 2012, Dubrovnik, Croatia.
- *General Co-chair* (with W. D. Gao), IEEE Symposium on Power Electronics and Machines in Wind Applications – PEMWA 2012, Denver, CO, July 2012.
- *General Chair* (with R. Beard), 2012 International Conference on Unmanned Aircraft Systems, Philadelphia, PA, June 2012.
- *General Chair*, 2011 IEEE Multi Systems Conference, September 2011, Denver, CO, USA.
- *Conference Chair*, 16th IASTED International Conference on Robotics and Applications, June 2011, Vancouver, Canada.
- *General Chair*, 2011 International Conference on Unmanned Aircraft Systems, May 2011, Denver, CO, USA.
- *General Chair*, 3rd International Symposium on Unmanned Aerial Vehicles, Dubai, June 21-25 2010.
- *General Chair*, 1st International Symposium on Unmanned Aerial Vehicles, Orlando, FL, June 2008.
- *General Chair*, (with Dr. W. Gruver) 2008 International Conference on Distributed Human Machine Systems, Athens, Greece, March 2008.
- *General Chair*, (with Dr. Panos Antsaklis) 2007 Mediterranean Conference in Control and Automation (MCCA), Athens, Greece, June 2007.
- *Local Arrangements Chair*, 2006 IEEE International Conference in Robotics and Automation (ICRA 2006), Orlando, FL, USA.
- *Program Chair*, 2004 IEEE International Conference in Robotics and Automation (ICRA 2004), New Orleans, Louisiana.
- *General Chair*, (with Dr. Frank Lewis) 2003 Mediterranean Conference in Control and Automation (MCCA), Rhodes, Greece, June 2003.
- *General Chair*, (with Dr. Zoran Vukic) Mediterranean Conference in Control and Automation (MCCA), Dubrovnik, Croatia, June 2001.
- *U.S. Program Chair*, IEEE Conference on Control Applications (CCA), Trieste, Italy, September 1998.
- *General Chair*, International Advanced Robotics Programme (IARP); International Workshop on Autonomous Underwater Vehicles for Shallow Waters and Coastal Environments, Lafayette, LA, February 1998.
- *General Chair*, IEEE International Workshop on Control Problems in Robotics and Automation: Future Directions, San Diego, CA (CDC venue), December 1997.
- *Registration Chair*, 36th IEEE Conference on Decision and Control (CDC), San Diego, CA, December 1997.
- *Publicity Chair*, IEEE Conference on Computational Intelligence in Robotics and Automation, CIRA'97, Monterey, CA, July 1997.
- *Program Vice-Chair, Robotics*, ICTAI'96, 8th IEEE International Conference on Tools with Artificial Intelligence, Toulouse, France, November 1996.
- *Publicity Chair*, 1996 IEEE International Conference in Robotics and Automation, Minneapolis, MN, April 1996.
- *Local Arrangements Chair*, 34th IEEE Conference on Decision and Control (CDC), New Orleans,

- LA, December 1995.
- *General Chair*, 10th IEEE International Symposium on Intelligent Control, (ISIC'95) Monterey, CA, August 1995.
- *General Chair*, 2nd IEEE Mediterranean Symposium on New Directions in Control and Automation, Chania, Crete, Greece, June 1994.
- *Local Arrangements and Publications Chair* 1993 Workshop on Computer Architectures for Machine Perception (CAMP'93), New Orleans, LA, December 1993.
- *Vice Program Chair*, 4th International Conference on Tools With Artificial Intelligence, Arlington, VA, November 1992.
- *Program Cochairman*, 4th IEEE International Symposium on Intelligent Control (ISIC '89), Albany NY, September 1989.

Conference Technical/Scientific Program Committees

- Associate Editor, IEEE Intelligent Robots and Systems (IROS) Conference, Portugal, 2012.
- International program Committee, 9th IFAC Conference on Manoeuvring and Control of marine Craft (MCMC'12), Italy, September 2012.
- International Advisory Committee, *IEEE-CYBER 2012*, Bangkok, May 2012.
- Organizing Committee, *NATO-ASI Advanced All-Terrain Autonomous Systems Workshop*, Cesme-Ismir, Turkey, August 13-24, 2010.
- Networked Robotics, IFAC Workshop, Golden, CO, October 2009.
- Conference on Telecommunications, ConTel 2009, Zagreb, Croatia, June 2009.
- Mediterranean Conference on Control and Automation, Thessaloniki, Greece, June 2009.
- IFAC Conference on Control Applications in Marine Systems, Croatia, September 2007.
- Conference on Telecommunications, ConTel 2007, Zagreb, Croatia, June 2007.
- European Control Conference, Greece, June 2007.
- Mediterranean Conference on Control and Automation, Ancona, June 2006.
- Conference on Telecommunications, ConTel 2005, Zagreb, Croatia, June 2005.
- Mediterranean Conference on Control and Automation, Cyprus, June 2005.
- Conference on Telecommunications, ConTel 2005, Zagreb, Croatia, June 2005.
- IEEE / JRS International Conference on Intelligent Robots and Systems (IROS), Las Vegas, 2003.
- MED'03, Rhodes, Greece, June 2003.
- Conference on Telecommunications, ConTEL 03, Zagreb, June 2003.
- IEEE International Conference on Robotics and Automation, Washington D.C., May 2002.
- 2002 Mediterranean Conference in Control and Automation (MCCA), Lisbon, Portugal, July 2002.
- Conference on Telecommunications, ConTEL 01, Zagreb, Croatia, June 2001.
- IEEE International Conference on Robotics and Automation, San Francisco, April 2000.
- Second World Manufacturing Congress, WMC'99, UK, September 1999.
- 14th IEEE International Symposium on Intelligent Control, Cambridge, MA, August 1999.
- Conference on Telecommunications, ConTEL 99, Zagreb, Croatia, June 1999.
- IEEE International Conference on Robotics and Automation, Detroit, May 1999.
- IEEE/JRS International Conference on Intelligent Robots and Systems (IROS), Canada, October 1998.
- IEEE International Conference on Robotics and Automation, Belgium, May 1998.
- IEEE International Conference on Systems, Man and Cybernetics, Orlando, FL, October 1997.
- Sixth International Conference on Intelligent Systems, Boston, MA, June 1997.
- Fifth IEEE Mediterranean Conference on Control and Systems, Paphos, Cyprus, July 1997.
- Conference on Telecommunications, ConTEL 97, Zagreb, Croatia, June 1997.
- 5th IEEE International Conference on Emerging Technologies and Factory Automation (EFTA 96) / Discrete Event / Hybrid Systems and Control Track, Hawaii, November 1996.

- 11th IEEE International Symposium on Intelligent Control, September 1996.
- Fourth IEEE Mediterranean Symposium on Control and Automation, Chania, Crete, June 1996.
- 1996 IEEE International Conference on Robotics and Automation, Minneapolis, MN, April 1996.
- Third IEEE Mediterranean Conference on Control and Automation, Cyprus, June 1995.
- Conference on Telecommunications, ConTEL 95, Zagreb, Croatia, June 1995.
- IEEE Conference on Systems, Man, and Cybernetics, San Antonio, Texas, November 1994.
- 7th International Conference on Parallel and Distributed Computing Systems, Las Vegas, October 1994.
- 9th IEEE International Symposium on Intelligent Control, August 1994.
- Conference on Telecommunications, Zagreb, Croatia, June 1994.
- Joint IEEE/IFAC Symposium on Computer Aided Control System Design, March 1994.
- 8th IEEE International Symposium on Intelligent Control, August 1993.
- Conference on Telecommunications, ConTEL 93, Zagreb, Croatia, June 1993.
- 7th IEEE International Symposium on Intelligent Control, August 1992.
- VLSI Workshop on Research and Education, Louisiana, April 1992.
- 1991 IEEE International Conference on Robotics and Automation.
- 1991 EURISCON, The European Robotics and Intelligent Systems Conference.
- 6th IEEE International Symposium on Intelligent Control 1991.

Conference Session Chairman (Selective)

- 2011 IEEE Multi-Conference on Systems and Control, Denver, CO, September 2011.
- 19th Mediterranean Conference on Control and Automation, Corfu, Greece, June 2011.
- 17th Mediterranean Conference on Control and Automation, Thessaloniki, Greece, June 2009.
- 14th Mediterranean Conference on Control and Automation, Ancona, Italy, June 2006.
- IEEE International Conference on Robotics and Automation, Orlando, FL, May 2006.
- 9th Mediterranean Conference on Control and Automation, Croatia, June 2001.
- Conference on Telecommunications, ConTEL, Zagreb, Croatia, June 1999.
- 1999 IEEE International Conference on Robotics and Automation.
- IEEE/RJS International Conference on Intelligent Robotics and Systems, October 1998.
- 1998 IEEE International Conference on Robotics and Automation.
- Fifth IEEE Mediterranean Conference on Control and Systems, June 1997.
- 1997 IEEE International Conference on Robotics and Automation.
- Fourth IEEE Mediterranean Symposium on New Directions in Control and Automation, June 1996.
- World Automation Congress, ISRAM, France 1996.
- 1996 IEEE International Conference on Robotics and Automation.
- Third IEEE Mediterranean Symposium in Control and Automation, June 1995.
- Third International Conference on Automation, Robotics and Computer Vision, ICARCV '94, Singapore.
- 1994 IEEE International Symposium on Intelligent Control.
- 1994 Joint IEEE/IFAC Symposium on CACSD.
- 1993 IEEE International Symposium on Intelligent Control.
- IEEE Mediterranean Symposium on New Directions in Control Theory and Applications 1993, Crete, Greece.
- 1993 IEEE International Conference on Robotics and Automation.
- 1992 IEEE International Symposium on Intelligent Control.
- 1991 IEEE International Symposium on Intelligent Control.
- 1991 IEEE International Conference on Robotics and Automation.
- 13th IMACS World Congress on Computation and Applied Mathematics, Ireland, 1991.
- 1990 IEEE International Conference on Robotics and Automation.

- 1990 IEEE American Control Conference.
- 1990 SPIE Conference in Intelligent Robotics in Space.
- 1988 IEEE International Conference on Robotics Automation.
- 26th IEEE Conference on Decision and Control, 1987.

EDITORIAL BOARD APPOINTMENTS

✚ Since May 1, 2006	<i>Editor-in-Chief, Journal of Intelligent and Robotic Systems</i>
✚ Since January 2011	<i>Member, Editorial Advisory Board, Central European Journal of Engineering</i>
✚ Since 2010:	<i>Member Editorial Board, Central European Journal of Engineering</i>
✚ 1/2006-12/2008:	<i>Editor, IEEE SMC eNewsletter</i>
✚ 1/1996 – 12/2005	<i>Editor-in-chief, IEEE Robotics & Automation Magazine</i>
✚ 2/1996 – 2/1999	<i>Associate Editor, IEEE Trans. in Robotics & Automation</i>
✚ 10/ 1995 – Present	<i>Board of Editors, International Journal of Intelligent Control Systems</i>
✚ 1-12/1995	<i>Editor Elect, IEEE Robotics & Automation Magazine.</i>
✚ 1993 - Present	<i>Editorial Advisory Board, International Series on Microprocessor Based and Intelligent Systems Engineering, Kluwer Academic Publishers</i>
✚ 1993 - 1995	<i>Associate Editor, IEEE Robotics & Automation Magazine</i>
✚ 1/1992 – 12/2005	<i>Book Review Editor, Journal of Intelligent and Robotic Systems.</i>
✚ 9//1991 - 1992	<i>Managing Editor, Journal of Intelligent and Robotic Systems.</i>

GUEST EDITOR / SPECIAL ISSUES

K. P. Valavanis, Guest Editor, Special Issue on UAVs, Journal of Intelligent and Robotic Systems, Special Issue on UAVs, Vol. 65, No. 1-4, March 2012.

K. P. Valavanis, Guest Editor, Special Issue on UAVs, Journal of Intelligent and Robotic Systems, Special Issue on UAVs, Vol. 61, No. 1-4, March 2011.

“Unmanned Aerial Vehicles”, *IEEE Robotics and Automation Magazine*, September 2006. Editors, K. P. Valavanis and G. J. Vachtsevanos

“Underwater Robotics Technologies”, *IEEE Robotics and Automation Magazine*, Vol. 6, No. 2, June 1999. Editors: D. Gracanin and K. P. Valavanis.

“Theory and Applications of Intelligent Controls”, *Journal of Intelligent Control and Systems, World Scientific Publishers*, Editors: K. P. Valavanis and F. L. Lewis.

“Discrete Event Systems in Robotics and Automation”, *Journal of Robotics and Autonomous Systems*, Vol. 13, No. 3, October 1994, *Elsevier Science*. Editors: T. Sobh, K. P. Valavanis.

INTERNATIONAL PROGRAM DEVELOPMENT

NSF Funded Workshop Organizer

International Program Development in Undersea Robotics and Intelligent Controls: A Joint U.S./Portugal Effort, Lisbon, Portugal, March 2 – 3, 1995. Researchers and scientists from the US and EEC countries discussed current problems in URIC and started collaboration on specific projects of common interest.

International Advanced Robotics Programme International Workshop on AUVs for Shallow Waters and Coastal Environments, Lafayette, LA, February 1998. (Representatives of nine countries: USA, Russia, China, France, Italy, Germany, Portugal, Croatia, and Greece.)

INTERNATIONAL WORKSHOPS AND TUTORIALS

K. P. Valavanis, G. J. Vachtsevanos, Workshop on “*Micro and Small UAVs: Design, Sensor Based Control and Applications*”, 19th Mediterranean Conference on Control and Automation, Corfu, Greece, June 2011.

K. P. Valavanis, G. J. Vachtsevanos, G. Atsalakis, Workshop on “*Modelling, Risk Management and Control of Financial Institutions*”, 19th Mediterranean Conference on Control and Automation, Corfu, Greece, June 2011.

G. J. Vachtsevanos, K. P. Valavanis, Workshop on “*UAS Civilian Applications: Fire Detection, Forest Protection, Emergency Response*”, 17th Mediterranean Conference on Control and Automation, Thessaloniki, Greece, June 2009.

K. P. Valavanis, G. Vachtsevanos, Tutorial on “*Unmanned Aerial Vehicles*”, 15th Mediterranean Conference on Control and Automation, Athens, Greece, June 2007.

P. Oh, T. Adams, K. Valavanis, Workshop on “*Unmanned Air Vehicles: Payloads and Missions*”, IEEE International Conference on Robotics and Automation, Orlando, FL, May 2006.

P. Oh, K. Valavanis, Tutorial on “*Hands-On Lessons for Unmanned Air Vehicle Construction*”, IEEE International Conference on Robotics and Automation, Orlando, FL, May 2006.

G. Vachtsevanos, K. P. Valavanis, Tutorial on “*Unmanned Aerial Vehicles: Enabling Technologies and Roadmap for Autonomy*”, IEEE International Conference on Robotics and Automation, New Orleans, April 2004.

G. Vachtsevanos, K. P. Valavanis, N. C. Tsourveloudis, Workshop on *Unmanned Aerial Vehicles*, 11th Mediterranean Conference on Control and Automation, Rhodes, Greece, June 2003.

K. P. Valavanis, I. Lovrek, “*Agents and Agent-Based Systems*”, Tutorial Workshop No. 1, Conference on Telecommunications, (ConTEL’ 2001), Zagreb, Croatia, June 2001.

L. Acar, K. P. Valavanis, H. R. Berenji, “*Intelligent Control with Applications*”, Tutorial Workshop No. 1, 31st IEEE Conference on Decision and Control, Tucson, AZ, December 1992.

K. P. Valavanis (organizer), “*Theory and Applications of Intelligent Control Systems*” 1991 IEEE American Control Conference, Tutorial Workshop No. 2, June 1991.

K. P. Valavanis, “*Robotics and its Applications*”, Higher Technological Institute, Nicosia, Cyprus, May 1991.

K. P. Valavanis, “*Intelligent Robotic Systems: Theory, Design and Applications*”, IEEE International Conference on Robotics and Automation, Workshop S2, April 1991.

K. P. Valavanis, “*Intelligent Robotic Systems*”, National Technical University of Athens, Greece, March 1990.

CONFERENCE INVITED SESSIONS

- T. Sobh, K. P. Valavanis, “*Discrete Events and Hybrid Systems in Robotics and Automation*”, Proceedings of IROS '95, Pittsburgh, PA, August 1995.
- G. J. Vachtsevanos, K. P. Valavanis, “*Intelligent Control: Applications in Robotics and Manufacturing I*”, Proceedings of the 30th IEEE Conference on Decision and Control, Brighton, England, December 1991.
- G. J. Vachtsevanos, K. P. Valavanis, “*Intelligent Control: Applications in Robotics and Manufacturing II*”, Proceedings of the 30th IEEE Conference on Decision and Control, Brighton, England, December 1991.

PROFESSIONAL SOCIETY MEMBERSHIPS & ACTIVITIES

- Fellow, Member, AAAS
- Senior Member, IEEE.
- IEEE Robotics and Automation Society; Co-Chair, Discrete Event Dynamic Systems (DEDS) Technical Activities Committee (1993 -1995).
- IEEE Society Memberships: Control Systems Society, IEEE Robotics and Automation Society, Computer Society, SMC Society, Oceanic Engineering Society.
- Sigma Xi (1986-1995).
- New York Academy of Sciences (. – 1996)
- International Service Robot Association (IRSA).
- Robotic Industries Association (RIA).
- UL at Lafayette Sigma Xi Club: Secretary 1992-93.

REVIEWER: IEEE Control Systems Society, IEEE Robotics and Automation Society, IEEE Automatic Control Transactions, IEEE Transactions on Systems, Man and Cybernetics, IEEE Computer Magazine, Journal of Intelligent and Robotic Systems (JINT), Journal of Robotic Systems, IEEE Robotics and Automation Conference, IEEE Conference on Decision and Control, IEEE American Control Conference, IEEE Conference on Systems, Man and Cybernetics, NSF.

SELECTED INVITED PRESENTATIONS, KEYNOTE ADDRESSES & SEMINARS

Briefings: NASA Dryden, 2011
AUVSI, Rocky Mountain Chapter, 2011
FAA, SAIC, US SOCOM, SPAWAR, ARL, NRL
Hillsborough County (Tampa)
SRI, Innova Holdings, Inc.
QTSI, Concurrent Technologies Corporation

Keynote Addresses

- Colorado Cleantech Industry Association (CCIA) Fellows Institute, November 2012
- Adams County Economic Development, Aerospace and Aviation Taskforce, November 2012
- Adams County Economic Development, Denver, CO, March 2012
- 6th International KES Conference on Agents and Multi-Agent Systems – Technologies and Applications (KES AMSTA 2012), Dubrovnik, June 2012
- 1st Workshop on Research, Development and Education on UAS (RED-UAS), Seville, Spain, Nov./Dec. 2011
- Unmanned Aerial Systems: Civilian Applications and Technology Challenges, Politecnico di Torino,

- European Aeronautical Science Network, November 2011
- 11th IASTED Conference, Orlando, FL, November 2008
- Conference on Telecommunications, ConTel 2005, Zagreb, Croatia, June 2005
- NRL Workshop, Washington D.C., February 2004 – Invited presentation
- 1st IEEE Latin American Robotics Symposium, LARS 2004, Mexico City, October 2004.
- 4th IFAC Conference on Maneuvering and Control of Marine Craft, Brijuni, Croatia, September 1997.

Invited talks / Seminars

California State University, Los Angeles (2011, 2012)
 University of Texas at Arlington (latest, 2012)
 University of Texas at Arlington, Distinguished Lecturer Series (twice prior to 2012)
 Colorado School of Mines (2012, 2010)
 Cleveland State University (2012)
 University of Notre Dame (2012, 2011, 2010)
 Air Force Academy, Colorado (2011)
 University of Wyoming (2011)
 University of Colorado, Denver
 University of Denver (annual addresses)
 University of Bridgeport, CT
 New Jersey Institute of Technology, NJ
 Drexel University, Distinguished Lecturer Series
 Boeing / American helicopter Society, Philadelphia, PA
 University of Ancona, Italy (short courses)
 Technical University of Crete
 British Aerospace Systems (BAES), UK
 University of Lancaster, UK (several seminars)
 11th Cretan Medical Conference, November 2001, Greece
 Bertinoro, Italy: Ph.D. Summer School organized by the University of Ancona
 University of South Florida
 Georgia Institute of Technology (May 9-10, 2002)
 Texas A&M University (2002)
 University of New Orleans (2002)
 University of Louisiana at Lafayette (2002)
 EURO UVS Meeting, Paris, France
 WEAG Meeting, Brussels, Belgium
 University Carlos III of Madrid, Spain
 University of Maribor, Faculty of EE and CS, Maribor, Slovenia.
 National Science Foundation, Division of ECS.
 Technical University of Vienna, Austria.
 LA Board of Regents Speaker, "Speaking of Science" (SoS) program.
 Technical University of Crete, Greece (Several seminars).
 University of Patras, Greece (Several seminars).
 University of Zagreb, Croatia (Several Seminars).
 Rensselaer Polytechnic Institute, NY.
 Georgia Institute of Technology, GA, *Distinguished Lecturer Series in Systems and Control*
 Rice University, TX.
 Drexel University, PA.
 University of Windsor, Canada.
 University of Hull, United Kingdom.
 National Technical University of Athens (NTUA), Greece (Several seminars).

University of Twente, The Netherlands (Several seminars).
Higher Technological Institute, Nicosia, Cyprus (Several seminars).
Analog Devices Company, MA.
SolidTech Company, CA.