

Petros Ioannou

Short CV

Petros A. Ioannou received the B.Sc. degree with First Class Honors from University College, London, England, in 1978 and the M.S. and Ph.D. degrees from the University of Illinois, Urbana, Illinois, in 1980 and 1982, respectively. During the period 1975-1978, he held a Commonwealth Scholarship from the Association of Commonwealth Universities, London, England. He was awarded several prizes, including the Goldsmid Prize and the A. P. Head Prize from University College, London. From 1979 to 1982 he was a research assistant at the Coordinated Science Laboratory at the University of Illinois. In 1982, Dr. Ioannou joined the Department of Electrical Engineering-Systems, University of Southern California, Los Angeles, California. He is currently the A.V. 'Bal' Balakrishnan Chair Professor in the same Department and the Director of the Center of Advanced Transportation Technologies. He also holds courtesy appointments with the Departments of Aerospace and Mechanical Engineering and Industrial System Engineering. He is also the Associate Director for Research for the University Transportation Center METRANS at the University of Southern California. He is the founder and Director of the Master Degree program on Financial Engineering at USC. He was visiting Professor at the University of Newcastle, Australia and the Australian National University in Canberra during parts of Fall of 1988, the Technical University of Crete in summer of 1992 and Fall of 2001 and served as the first Dean of the School of Pure and Applied Science at the University of Cyprus (UCY) in 1995 while on leave from the University of Southern California. As a Dean he pioneered the establishment of the School of Engineering at UCY. In 2008/2009 he was a faculty member at the Department of Electrical Engineering and Information Technologies of the Cyprus University of Technology while on sabbatical leave from the University of Southern California where he helped established the educational curriculum of the Department.

Dr. Ioannou was the recipient of the *Axelby Best Paper Award* by the IEEE Control System Society in 1984 and the recipient of a *1985 Presidential Young Investigator Award* for his research in Adaptive Control. In 2009 he received the Institute of Electrical and Electronic Engineering (*IEEE Intelligent Transportation System (ITS) Society (ITSS) Outstanding ITS Application Award* and the *2009 IET Heaviside Medal for Achievement in Control* by the Institution of Engineering and Technology (former IEE) in UK. In 2012 he received the *IEEE ITSS Outstanding ITS Research Award*. In 2016 he received the *IEEE Transportation Technologies Field Award* (highest level in IEEE), the *Senior Research Award* from the Viterbi School of Engineering and the *Transition to Practice Award* from the IEEE Control System Society. In 2019 he received the *User-Inspired Research Award* in recognition and Appreciation of Excellence from the Viterbi School of Engineering. In 2022 he was inducted to the *National Academy of Engineering and to the National Academy of Inventors and became Foreign member of the Academia Europaea: The European Academy of Science*.

He is currently the Vice President for Membership Activities of the IEEE ITS Society. Prior to that he was Vice President for Publications and the Editor in Chief of the IEEE Transactions on Intelligent Transportation Systems. He has been an Associate Editor for the IEEE Transactions on Automatic Control, the International Journal of Control, Automatica and IEEE Transactions on Intelligent Transportation Systems. He served as a Member of the Control System society on IEEE ITS Council Committee and his center on advanced transportation technologies was a founding member of ITS America. He also served as Associate Editor at Large of the IEEE Transactions on Automatic Control and Chairman of the International Federation of Automatic Control (IFAC) Technical Committee on Transportation Systems. He served as a member of the Board of Governors of the IEEE ITS Society for over a decade. He is one of the founders of the Mediterranean Control Association and a member of the Board of Governors and one of the founders of the IEEE Mediterranean Control Conference, which has been taking place annually since 1992. He is a co-founder of the University Transportation Center, METRANS, at the University of Southern California and California State University Long Beach.

Dr. Ioannou is a Lifetime Fellow of IEEE, Fellow of International Federation of Automatic Control (IFAC), and Fellow of American Association for the Advancement of Science (AAAS) and the

author/co-author of 9 books and over 400 research publications in the area of controls, vehicle dynamics, neural networks, nonlinear dynamical systems, intelligent transportation systems and Financial Engineering. He served as a technical consultant to several automotive, aerospace and computer/electronics companies and as expert witness on robotics, automotive control and sensor systems and safety. He founded SSC Systems Inc in the US in the early 90's and TranSim Inc in Cyprus which operated as research consulting companies in the area of transportation and autonomous vehicles for a decade.

Extended CV

PETROS A. IOANNOU, Ph.D.

BACKGROUND/EXPERIENCE

Educational Record

1. University of Illinois, College of Engineering, Urbana, Illinois. 1/80 - 8/82, Ph.D. in Electrical Engineering, Thesis title: "Robustness of Adaptive Schemes with Respect to Modeling Errors."
2. University of Illinois, College of Engineering, Urbana, Illinois. 8/78 - 12/79 M.S. Thesis title: "Microprocessor Control of Double Magnet Suspension System."
3. University of London, University College, London. 9/75 - 6/78, B.Sc. in Mechanical Engineering, June 1978. Thesis title: "Calibration of the Water Wave Tank."

Work Experience/Accomplishments

- University of Southern California, Department of Electrical Engineering-Systems: Assistant Professor from Fall 1982 to Spring 1987. Associate Professor from Spring 1987 to 1992. Full Professor from Fall 1992 to present
- A.V. 'Bal' Balakrishnan Chair, 2016-present
- Joint Appointment with the Department of Aerospace and Mechanical Engineering, 2004-present
- Joint Appointment with the Department of Industrial and Systems Engineering, 2011-present
- Adjunct Professor University of Cyprus, Sept. 2010 to 2013
- Founder of the Southern California Center of Advanced Transportation Technologies, 1991
- Director of the Southern California Center of Advanced Transportation Technologies, 1991 to present.
- Associate Director for Research, METRANS 2006-present
- Visiting Professor Cyprus University of Technology, 2008/2009
- Visiting Professor, Technical University of Crete, Chania, Greece, Summer 1992, Fall 2001
- Visiting Professor at the University of Newcastle, Australia, Fall 1988
- Visiting Professor at the Australian National University in Canberra Fall of 1988,
- Dean of the School of Pure and Applied Science at the University of Cyprus in 1995/1996 where he pioneered the establishment of the School of Engineering at the University of Cyprus
- One of the founders of the Mediterranean Control Association, 1998
- One of the founders of the IEEE Mediterranean Conferences which started in 1992 and became an annual event
- One of the founders of the University Transportation Center METRANS at the University of Southern California/California State University Long Beach, 1999
- Controls Group Leader 2004-2008
- Founder and Director of the Masters Program in Financial Engineering 2008-present

- Editor in Chief of the IEEE Transactions on Intelligent Transportation Systems 2015-2018
- Vice President for Publications of the IEEE Intelligent Transportation Systems Society 2019-2021
- Vice President for Membership Activities of the IEEE Intelligent Transportation Systems Society 2021 to present

Consulting

- Expert Witness for Koskoff Koskoff and Bieder PC. Two accident cases, 2022
- Expert Witness for AutoStore Technology, Kirkland and Ellis LLP, 2022
- MEMsDRIVE, 2017-2019
- Liner LLP consultant on behalf of Signal IP Inc. 2014-2015
- Tempest Technologist Inc. 8939 S Sepulveda Blvd, Los Angeles, CA 90045 Technical Consultant, 2012
- RCRSD Legal firm, Newport Beach, CA: Expert Consultant to Toyota Unattended Acceleration (Utah case) 2011, 2012
- Thomson Reuters Expert Witness Services: Expert Consultant to a Toyota Unattended Acceleration (San Diego Case) , 2012
- ACORN Technologies, Technical Consultant, 1999 to 2002
- Lockheed Company Technical Consultant, 1985 to 1993.
- Ford Motor Company Design and implementation of an intelligent cruise control system on a Lincoln Towncar, June 1992 to 1994.
- Project Trilby, General Motors Research Laboratories: A successful design and implementation of a steer-by-wire control system, July 1988.
- Rockwell International, 12214 Lakewood Boulevard, Downey, CA 90241: Technical Consultant, 1985.
- HR TEXTRON, Systems Engineering Division, Irvine, CA 92714: Technical Consultant, May and June 1985.
- Dynamic Systems, 2014 Silver Court West, Urbana, Illinois: Technical Consultant from October 1980 to September 1984.
- General Electric Company, One River Road, Schenectady, NY 12435: Technical Consultant, 15 days, July - December 1981.
- Ford Motor Company, P. O. Box 2053, Dearborn, MI 48121: Technical Consultant, 2 days in November 1980, 7 days in November 1981.

Professional Activities

2022

- Vice President for Membership Activities IEEE Intelligent Transportation Systems, Jan. 2022-present

2019-2021

- Vice President for Publications IEEE Intelligent Transportation Systems 2018-2021
- Board of Governors Member of IEEE Intelligent Transportation Systems 2018-today
- Workshop Organizer: Smart Freight Mobility – Current Applications and Guidelines for Future Development’, 22st IEEE International Conference on Intelligent Transportation Systems (ITSC2019) on Oct. 2019 at Auckland, New Zealand
- ITSS Award evaluation committee
- Graduate Curriculum Committee in EE-Systems

- Advisor on the South Coast AQMD Clean Fuels Advisory Committee South Coast AQMD

2018

- Editor in Chief of the IEEE Transactions on Intelligent Transportation Systems, 2015 to 2018
- Finance Chair of the 21st IEEE International Conference on Intelligent Transportation Systems Nov. 2018, Maui, Hawaii, US
- General Chair of IEEE Intelligent Vehicles Symposium, June 2017, Redondo Beach, CA
- Steering committee member of the IEEE Transactions on Intelligent Vehicles, 2014-present
- 2015- present ITSS Award evaluation committee
- Graduate Curriculum Committee in EE-Systems 2018-present
- Merit Review member of Teaching/Service Committee 2018
- Workshop Organizer: Smart Freight Mobility – Current Applications and Guidelines for Future Development’, 21st IEEE International Conference on Intelligent Transportation Systems (ITSC2018) on Nov. 4, 2018 at Maui, Hawaii, US

2010-2017

- Associate Editor of IMA Journal of Mathematical Control and Information 2012-2017
- External member of promotion committee of Prof. Papamichael Technical University of Crete, Greece
- Member of the Council of Educational Evaluation-Accreditation (CEEA/SEKAP) 2004-2015, Ministry of Education, Republic of Cyprus
- External member of promotion committee of Prof. Boutalis Democritus University of Thrace, Greece
- Member of the committee for the external evaluation of the Postgraduate Programs of the School of Science and Technology (a. MSc in Information and Communication Technology Systems and b. MSc in Energy Systems) of the International Hellenic University, November 4 - 9 2013
- 2013 ITSS Award evaluation committee
- Member of the Council of Educational Evaluation-Accreditation (CEEA/SEKAP), Ministry of Education, Republic of Cyprus
- Proposal Review for Dutch Institute for Advanced Logistics (DINALOG), Netherlands
- Proposal Review for Dutch Institute for Advanced Logistics (DINALOG), Netherlands
- Program Committee of the 2012 International Conference on Logistics and Maritime Systems (LOGMS) to be held in Bremen, Germany, August 22-24 2012.
- Guest Editor International Journal of Adaptive Control and Signal Processing, Special Issue on New trends in Adaptive Control Systems 2012
- Associate Editor of IMA Journal of Mathematical Control and Information 2012-2020
- Associate Editor, 2012 IEEE International Conference on Vehicular Electronics and Safety (ICVES'12) sponsored by the IEEE Intelligent Transportation Systems Society Istanbul July 24-27, 2012.
- Program Committee Member of the 2012 International Conference on Logistics and Maritime Systems (LOGMS) held in Bremen, Germany, August 22-24 2012.
- International Program Chair of the IFAC Symposium on Control in Transportation to take place in Sept. 2012 in Sofia, Bulgaria.
- Member of the Board of Governors of the IEEE Intelligent Transportation Systems Society, 2005-2017

- Member of Evaluation Committee of Private College and University Programs appointed by the Ministry of Education of the Republic of Cyprus, 2011-2015
- Panel Reviewer for the Department of Energy (DOE) ‘Driver Feedback Technology Area of Interest of the FY 2011 Vehicle Technologies Program Wide Funding Opportunity Announcement (FOA-0000239)
- Track Chair on Port Operations and Program Organizer Committee member of the 4th METRANS National Urban Freight Conference, Long Beach, CA, October 12-14, 2011
- Program Committee Member of the 2011 IEEE Mediterranean Conference on Control and Automation, Corfu, Greece
- Chair of the external evaluation committee for the Department of Electrical and Electronic Engineering of the Technical University of Crete, Chania, Greece appointed by the Higher Education Quality Assurance Agency of Greece, May/June 2011.
- Reviewer for the Research Grant Council (RGC) of Hong Kong, 2011
- Reviewer for the EPSRC Research Grants, UK, 2011
- Associate Editor for the Intelligent Vehicle Symposium June 2011 Kongresshaus Baden-Baden, Germany
- Guest Editor for International Journal of Adaptive Control and Signal Processing on ‘New trends in Adaptive Control Systems’ 2011
- Advisory Board Member for the Integrated Series on Intelligent Systems Books to be published by Zhejiang University and Springer
- Member of the Board of Governors of the IEEE Intelligent Transportation Systems Society, 2005-present
- Member of the Board of Governors of the Mediterranean Control Association, 1998-present
- Chairman of the IFAC Technical Committee on Transportation Systems, 2005 to 2009
- Associate Editor of the 13th International IEEE Conference on Intelligent Transportation Systems – ITSC2010
- Associate Editor for 2010 Intelligent Vehicles Symposium June 21-24, 2010 in University of California, San Diego, CA, USA
- NSF Review Panelist NSF CPS Medium Panel, Transportation, P101806 June 7-8, 2010
- Expert panel member for evaluating ‘Concepts and Solutions for Zero-Emission Container Movement Systems’ for the Ports of Los Angeles/Long Beach and Alameda Corridor Transportation Authority, 2010
- Panel member of the Ministry of Education of the Republic of Cyprus committee (SEKAP) for accreditation of University programs in Cyprus 2007-2011
- Expert panel member to review test plans by the USDOT/VOLPE to look into vehicle safety with focus on alleged unintended Toyota acceleration problem 2010
- Invited Participant NSF-sponsored Workshop on ‘The Future of Intelligent Transportation Systems and its Implication with regard to Mobility and Sustainability’, Columbus, Ohio, May 4-5, 2010
- IPC member IFAC Symposium Advances in Automotive Control, Munich, Germany, July 12-14, 2010
- Member of the European Space Policy expert panel of the Ministry of Transportation and Works of the Republic of Cyprus 1/2009- present
- Guest Editor of the special Issue on ‘Selected papers from the 2nd National Urban Freight Conference, Long Beach, CA, Dec. 2007’ Transportation Research Part E: Logistics and Transportation Review, Vol. 46E, issue 4, July 2010

Prior to 2010

- Organizer and National Organizing Committee Chair 12th IFAC Symposium on Transportation Systems, September 2-4, 2009
- Organizer and General Chair of the 2008 International Trade and Freight Transportation Conference, September 1-3, 2008, Ayia Napa, Cyprus
- Technical Program Chair of the 2007 IEEE Intelligent Vehicles Symposium, June 13-15, 2007, Istanbul, Turkey
- Organizer and Program Chair of the International Conference on Intelligent Systems And Computing: Theory And Applications (ISYC), July 6-7, 2006, Ayia Napa, Cyprus
- Technical Program Chair of the 2nd Annual National Urban Freight Conference, Dec. 5-7, 2007
- Associate Editor for the 2008 IFAC Congress, July 2008, Korea
- Chair of the IEEE Fellow committee of the IEEE Intelligent Transportation Society 2006-2008
- Associate Editor at Large of the IEEE Transactions on Automatic Control, 1999 to 2010
- IEEE Control System Society External Member IEEE-USA Transportation Policy 1995-2005
- Organizer of the Workshop on Modeling and Control of Complex Systems, June 30-July 2, 2005, Ayia Napa, Cyprus
- Invited participant to FHWA Advanced Research Think Tank Meeting, Berkeley, CA October 26-27, 2006
- Steering Committee Chair IEEE 13th Mediterranean Conference, June 2005, Limassol, Cyprus
- Technical Program Chairman IEEE 12th Mediterranean Conference, June 2004, Kusadaci, Turkey
- Session Chair at IEEE Conference on Decisions and Control and European Control Conference, Dec. 2005, Seville Spain
- Session Chair at IEEE Conference on Intelligent Transportation Systems, Sept. 2005, Vienna Austria
- Control System Society Member on IEEE ITS Council Committee, 1997 to 2005
- Control System Society Chair Member of Technical Activities Board, 2000 to 2005
- Guest Editor on Special Issue on Adaptive Cruise Control, IEEE Transactions on Intelligent Transportation Systems, Sept. 2003, Vol. 4, No. 3
- External Committee Member on IEEE-USA Transportation and Aerospace Technology Policy, 2000-2005
- Vice-Chairman of the IFAC Technical Committee on Transportation Systems, 2000 to 2005
- Associate Editor for the IEEE Transactions on ITS 1999- 2004
- Associate Editor for Automatica, December 1993 - 1995.
- Associate Editor for the IEEE Transactions on Automatic Control, 1987 - 1990.
- Member of the Editorial Board for the International Journal of Control. 1990-1995
- Member of the Technical Review Panel for the IVHS-IDEA program of the Transportation Research Board, 1992- 2000.
- Member of the Steering Committee on Advanced Vehicle Control Systems of IVHS America, 1992- 2000
- Member of the Advisory Group on Highway Electrification and Automation Technologies Project for the Southern California Association of Governments, 1992
- Session Chairman: The Third Yale Workshop on Applications of Adaptive Systems Theory, June 1983; 1984, 1989, 1992, 1993, 1996, 1997 American Control Conference; 1986, 1987, 1988, 1989, 1993, 1996, 1997, IEEE Conference on Decision and Control.

- Co-Organizer of the Montana Summer Institute on Current Issues in Adaptive Control, August 1984, 1985.
- Session Organizer: 1986, 1990, 1992 IEEE Conference on Decision and Control.
- Program Committee Member: 1987, 1992, 1997 IEEE Conference on Decision and Control.
- Program Committee Member: IFAC 7th Symposium on Transportation Systems: Theory and Application of Advanced Technology, China 1994.
- International Program Committee Member: IFAC Workshop on Robustness Issues in Adaptive Control, New South Wales, Australia, August 1988.
- Program Committee Member: International Conference on Vehicle Navigation and Information Systems, Ottawa, Canada, October 1993.
- General Chairman and Organizer of the Third IEEE Mediterranean Symposium on New Directions in Control and Automation, July 11-13, 1995, Limassol, Cyprus
- Member of the IEEE Control System Society, Fellow Nominating Committee, 2000
- Finance Chairman and Organizer of the 5th IEEE Mediterranean Symposium on Control and Systems, July 21-23, 1997, Paphos, Cyprus
- International Program Committee Member: International Conference on Advances in Vehicle Control and Safety, AVCS'98, Amiens-France, July 1-3, 1998
- Program Chairman of the 3rd IEEE Conference on Intelligent Transportation Systems, 2000
- Member of the Council of Educational Evaluation-Accreditation (CEEA/SEKAP), Ministry of Education, Republic of Cyprus
- Award committee chair of IEEE ITS Society

University Services/Committees/Activities

Current/Continuing

- Director of the Masters Degree Program in Financial Engineering 2008-present
- Director of the Center for Advanced Transportation Technologies 1992-present
- Member of executive committee of METRANS 1999-present
- Associate Director for Research for METRANS 2006-present and of the Pacific South West University Transportation Regional Center
- Curriculum Committee Member
- A.V. 'Bal' Balakrishnan Award Committee Chair 2019-present

2016

- Member of a 3-person External Reviewer committee to evaluate the Department of Electrical and Computer Engineering of the University of California at Riverside

2015

- Chair of Department Space Committee
- Controls Group leader

2013

- Member of Engineering Faculty Council (EFC)
- Member of Merit Review Committee for Research

2012

- Member of the advisory committee of the Ming Hsieh Institute (MHI) 2011-present
- Chair of the Evaluation Committee of evaluating the Chair of EE systems, 2012
- Member of committee for Chair election EE systems, 2012
- Member of Merit Review Committee for Teaching and Service
- Member of Engineering Faculty Council (EFC)

2010-2011

- Member of the Merit Review Committee for Teaching and Service 2010
- Member of Engineering Faculty Council (EFC) Sept. 2010-present
- Representative of EFC to the Division of Engineering Education (DEE) School of Engineering Committee, Oct. 2010-2011
- Meeting with incoming MS students on Preview event on Financial Engineering Incoming Students, November 4, 2011, Town and Gown

2006-2008

- Chair of Merit Review Department Sub-Committee 2004-2006
- Controls group leader 2004-2008
- Member of the Engineering Faculty Council 2004-2008

2004-2005

- Chair of the Faculty Merit Review Committee of the Engineering Faculty Council 2005
- Chair of the Department Research Merit Committee for 2004 evaluation
- Engineering Faculty Subcommittee on Dean's Evaluation, 2004/2005
- Associate Chairman of Engineering Faculty Council 2004-2005
- Member of University Faculty Senate 2004-2005
- Member of University Research Committee 2004-2005
- Member of Executive Committee for Appointment, Promotion, and Tenure, School of Engineering, 2003-2005
- Chair of Research Merit Committee 2005

2001-2003

- EE-Systems Department Strategic Guidance Committee Member 2001-present
- Chair of Research Merit Committee, 2001
- Chair of Research Merit Committee , 2002
- Member of Search Committee for EE-Systems Department Chair, 2002-03
- Member of the EE-Systems Department Curriculum Committee 2002-present
- METRANS Executive Committee Member 2000-present
- Director Center for Advanced Transportation Technologies 1992-present
- Member of Executive Committee for Appointment, Promotion, and Tenure, School of Engineering, 2003
- Member of EE-Systems Nomination for Awards Committee 2003-present

AWARDS AND HONORS

2022

- Inducted to the **National Academy of Engineering** for contributions to robust adaptive control and intelligent transportation systems for improved traffic flow and driver safety.
- Foreign member of the **Academia Europaea**
- Member of the **National Academy of Inventors**
- **Keynote Speaker** Intelligent Transportation Systems Conference, Macau, China, October 11, 2022
- **Keynote Speaker**, IEEE Intelligent Transportation Systems Society Workshop on Connected and Autonomous Vehicles, Oct. 27, 2022, Tysons, VA22102
- **Distinguished Lecture** KIOS Center at University of Cyprus, Cyprus , March 11, 2022

2021

- **Keynote Speaker** 2021 2nd International Conference on Control Theory and Applications, ICoCTA 2021, Nov. 4, 2021

- **Keynote Speaker**, Australian and New Zealand Control Conference, 25 November 2021 (ANZCC2021)

2020

- **Keynote Speaker** 2020 4th International Conference on Smart Rail, Traffic and Transportation Engineering (ICSTTE 2020) Madrid, Spain, October 19-21, 2020.
- **Plenary Speaker** EWGT 2020: The 23rd Euro Working Group on Transportation Cyprus, September 16-18 2020.

2019

- **User-Inspired Research Award** *In recognition and Appreciation of Excellence*, USC Viterbi School of Engineering, April 24, 2019
- **H.S. Tsien International Distinguished Scientists Lecture Series Speaker**, ‘Self Driving Cars, Connectivity and Traffic Flow Control’, Shanghai Jiao Tong University, 09/19/2019
- **Keynote Speaker** at the NSF Workshop on Control for Networked Transportation Systems “Traffic Flow Control in a Connected Environment”, July 8-9, 2019, Philadelphia, Pennsylvania
- **Keynote Speaker**, 2019 International Forum on Innovation and Emerging Industries Development, Shanghai, China, Sept. 17-19, 2019
- **Invited Speaker** at University of Minnesota, Department of Mechanical Engineering on Wednesday, November 20, 2019
- **Invited Speaker** KIOS Research Center, University of Cyprus, Nicosia, Cyprus, April 8, 2019
- **Invited Speaker**, Department of Mechanical Engineering, Worcester Polytechnic Institute (WPI), Worcester, MA, April 26, 2019

2018

- **Keynote Speaker** at IET Innovation Conference 2018, Oct. 3, 2018, Nicosia Cyprus
- **Plenary Speaker** at 2018 European Control Conference, Limassol Cyprus, June 15, 2018
- **IEEE Lifetime Fellow**

2017

- **Fellow of AAAS**
- **Transition to Practice Award** by IEEE Control System Society,
- **Plenary speaker** at ASME Dynamic Systems and Control Conference, October 11, 2017, Title: ‘Connectivity and Feedback Control and Optimization in Transportation’
- **Plenary Speaker** at the 1st IEEE Conference on Control Technology and Applications Connected Vehicles: Closing the loop with the highway, August 27-30, 2017, Hawaii, US
- **Keynote Speaker** at 29th Chinese Control and Decision Conference (2017 CCDC), May 29, 2017, Chongqing, China, Title: Traffic Flow Control: Closing the loop
- **Keynote Speaker** at the 6th Symposium of the European Association for Research in Transportation, (hEART 2017), Sept. 12-14, 2017, Haifa, Israel, Title: Connected Vehicles and Control of Traffic
- **Distinguished Lecture** (ECE & TASI) at Indiana University-Purdue University, Indianapolis, Oct. 27, 2018, Title: Traffic Flow Control: Closing the loop
- **Distinguished lecture** at UC Riverside, May 8, 2017, Title: Combined Variable Speed Limit and Lane Change Control for Highway Traffic

2016

- A.V. ‘Bal’ Balakrishnan Chair
- The 2016 IEEE Transportation Technologies Award presented at the IEEE ITS conference in Rio De Janeiro, Brazil, Nov. 2016
- Senior Research Award, by the Viterbi School of Engineering

- Keynote Speaker at the 1st Symposium on Management of Future Motorway and Urban Traffic Systems, Chania (Greece), June 2-3, 2016.

2015

- Invited panelist for the session ‘ECE as an Interdisciplinary Science’ University of Illinois, Electrical and Computer Engineering, Nov. 6, 2015
- Invited Speaker for IPAM Traffic Long Program Opening Day Temescal Gateway Park Retreat , Sept. 8, 2015
- Invited Speaker for IPAM program on Traffic Modeling, October 26-27, 2015
- Invited Speaker University of California San Diego, October 9, 2015
- Invited Speaker University of California Santa Barbara, January 30, 2015
- Invited Speaker Traffic Flow Management Culminating Workshop, IPAM, Lake Arrowhead, 12/6-12/11/2015

2013

- Keynote speaker in the 10th IEEE International Conference on Control & Automation (IEEE ICCA 2013) June 12-14, 2013, in Hangzhou, China
- Plenary Speaker for the 21st IEEE Mediterranean Conference on Control and Automation, Chania, Crete, June 2013
- Invited speaker for the TRAMAN21 Workshop 2013, Chania, Crete, Nov. 1st, 2013
- Invited Speaker, 3rd KIOS Workshop, University of Cyprus, June 25, 2013

Prior to 2013

- 2012 IEEE ITSS Outstanding Research Award
- Invited to be a Keynote speaker in the “Indo-US Conference, On Preventing Road Crash Injury Through Vehicle Safety Design” to be held in the Indian Institute of Science, Bangalore on March 6 and 7, 2012.
- Invited to be a Plenary speaker for the Chinese Control Conference, Hafei, China, July 25-27, 2012
- Rated as the 2nd most productive author and the 6th most cited author in the IEEE Transactions on ITS (see study in, L. Li et.al. ‘A Bibliographic Analysis of the IEEE Transactions on Intelligent Transportation Systems Literature’ IEEE Trans. on ITS vol.11, no.2, June 2010 pp 251-255)
- 2008 IEEE ITSS Outstanding ITS Application Award, June 2009
- 2009 IET Heaviside Medal for Achievement in Control, November 2009
- Fellow of the Institution of Engineering and Technology (IET), 2009
- Fellow of the Institute of Electrical and Electronic Engineers (IEEE) since 1992
- Fellow of the International Federation of Automatic Control since 2006
- Outstanding Teacher of the Year, The Latter-day Saint Student Association, March 2007
- Plenary Speaker at the 17th IEEE Mediterranean Conference on Control and Automation, June 24-26, 2009, Makedonia Palace, Thessaloniki, Greece
- Semi-Plenary Speaker at the 47th IEEE Conference on Decision and Control, Dec. 9-11, 2008 Cancun, Mexico
- Invited to be a Keynote Speaker at the 2nd IEEE Conference on Industrial Electronics & Applications, 23-25 May, 2007
- Plenary Speaker at the 11th IFAC Symposium on Control in Transportation Systems, August 28-September 1st, 2006, Delft, Netherlands
- Plenary Speaker IEEE International Conference on Vehicular Electronics and Safety, Oct. 14-16, 2005, Xi’an, China
- 1985 Presidential Young Investigator Award, The White House, February 14, 1985. A five-year award.
- Outstanding Transactions Paper Award for the best paper published in the IEEE Transactions on Automatic Control during 1982, 1983.

- Best Paper Presentation at the Session on "Numerical Methods in Analysis and Design of Control Systems" at the 1991 American Control Conference.
- Best Paper Presentation at the Session TA1 on "Robust Adaptive Control" at the 1989 American Control Conference.
- Best Paper Presentation for the paper "Identification and Control of Aircraft Dynamics Using Radial Basis Function Neural Networks" in the 1992 AIAA Guidance, Navigation and Control Conference.
- Commonwealth Scholarship, April 1975 - July 1978, The Association of Commonwealth Universities, London, England.
- Sessional Prize, A Goldsmid Prize, for the sessions 1975-1976, 1976-1977, University College, London, England.
- P. Head Prize, June 1978, University College, London, England; Most Outstanding graduate from Mechanical Engineering Department.

TEACHING

1. Courses Taught

- Mathematics and Tools for Financial Engineering (EE518)
- Evolutionary Stochastic Processes (EE512)
- Parameter Identification and Adaptive Control (EE 599, EE 685)
- Nonlinear Control Systems (EE 587)
- Linear Control Systems (EE 482)
- Digital Control Systems (EE 543a)
- Digital Control Laboratory Experiments (EE 543bL -- Lab course)
- Feedback Systems: Input-Output Properties (EE 599)
- Probability and Statistics (EE364)
- Linear Algebra and Differential Equations (Math 225)
- Ordinary Differential Equations (ENG499)
- Linear Systems Theory (EE585)
- Mathematics of Financial Engineering, 60 hour course for the USC Viterbi School of Engineering, Professional Programs, Fall 2011

2. Courses Developed

- Mathematics of Financial Engineering, 60 hour course for the USC Viterbi School of Engineering, Professional Programs, which I developed and taught in Fall of 2011
- Parameter Identification and Adaptive Control (EE 685)
- Digital Control Systems (EE 543a)
- Digital Control Laboratory Experiments (EE 543bL)
- Re-organized "Nonlinear Control Systems (EE 587)
- Combine EE685 and EE587 into one course Nonlinear and Adaptive Control (EE587)
- Mathematics and Tools for Financial Engineering (EE518), 4 unit course, Fall 2013

3. Directed Research and Internships Supervised (CPT)

2013

- **ENGR 596:** 4 in spring 2013; 7 in summer 2013; and 4 in fall of 2013

2012

- **ENGR 395:** Daniel Seturino
- **Undergraduate students sponsored as part of AUDI project:** Samuel Levy, Derek Lim, Renuka Fernandes Andrew Arey
- **ENGR 596 CPT course.**
 - Spring 2013 Lin, Shuaiqi, Alsuwaidi , Ahmed
 - Fall 2012 Lin Shuaiqi; Meng Fang
 - Summer 2012 He, Jiayi; Lin Shuaiqi; Rajabioun Tooraj, Shi Wen
- **EE590:** Fall 2012 Patel Kushal

4. Programs Developed

- Aerospace Controls Program for Masters students, 1984
- Masters Degree Program in Financial Engineering, 2009

5. Short Courses

- ‘Autonomous Vehicles, Platooning and Traffic Flow Control for Connected Vehicles’ IEEE Intelligent Transportation Society, 2017, <https://edu.itss-ieee.org/course/index.php?categoryid=1>
- "Traffic Flow Modeling and Control and Intelligent Vehicle and Highway Systems," Crown Sterling Suites, Los Angeles, June 1-4, 1993.
- “Intelligent Vehicle and Highway Systems” Lake Buena Vista, FL., December 1994.
- " Robust Adaptive Control Designs for Linear and Nonlinear Plants" 13th IFAC World Congress, San Francisco, CA, June 30- July 5, 1996
- " Control Issues in Intelligent Vehicle Highway Systems" 13th IFAC World Congress, San Francisco, CA, June 30- July 5, 1996
- " Robust Adaptive Control " IEEE Intern. Conf. on Control Applications, Dearborn, MI, Sept. 15-18, 1996
- “Design of Robust Adaptive Systems” 36th IEEE Conf. On Decision and Control, San Diego, CA, Dec. 8, 1997
- " Control Issues in Intelligent Vehicle Highway Systems" 36th IEEE Conf. On Decision and Control, San Diego, CA, Dec. 9, 1997.
- “Mathematics of the Internet” Department of Computer Science, University of Cyprus, June 2004
- ‘Robust Adaptive Control’ NASA Glen Research Center, Cleveland Ohio, June 2005

6. Invited Talks (other than conference papers. Selected list)

2017

- **Distinguished Lecture** (ECE & TASI) at Indiana University-Purdue University, Indianapolis, Oct. 27, 2018, Title: Traffic Flow Control: Closing the loop
- **Distinguished lecture** at UC Riverside , May 8, 2017, Title: Combined Variable Speed Limit and Lane Change Control for Highway Traffic

1985-86

- "Robustness Issues in Adaptive Control," at Montana Summer Institute on Current Issues in Adaptive Control, August 1984, 1985.
- "Adaptive Control: Theory and Applications," at AIAA Orange County Section, November 1985.
- "Robust Adaptive Control," General Motors Research Laboratories, Project Trilby, November 1985.
- "Robust Adaptive Tuning of Controllers," Ford Motor Company, June 1986.
- "Robust Adaptive Tuning of Controllers," General Motors Research Laboratories, Project Trilby, June 1986.
- "Theory and Design of Robust Adaptive Control Schemes," Oxford University, Department of Engineering Science, Oxford, England, July 1986.
- "Robust Adaptive Control," USC Industrial Associates Research Review, 1983, 1985.

1987

- "Adaptive Control of Time-Varying Plants," Workshop on Robust and Adaptive Control, Oaxaca, Mexico, December 2-4, 1987.

1988

- "Robust Adaptive Control: Theory, Applications, Limitations," Ford Motor Company, Electrical Engineering Division, July 28, 1988.
- "Design, Implementation and Testing of the Steer-by-Wire Control System," Project Trilby, General Motors Research Labs, July 27, 1988.
- "Adaptive Control of Time Varying Plants," Australian National University, November 1, 1988; and University of Newcastle, October 1988.

- "Time and Frequency Domain Uncertainty Bounds in Robust Adaptive Control," Australian National University, October 31, 1988; and University of Newcastle, October 1988.

1989

- "Robust Adaptive Control for Linear Plants," SIAM Conf. on Control in the 90's: Achievements, Opportunities and Challenges, May 17-19, 1989, San Francisco, CA.
- "Robust Adaptive Control," University of California at Santa Barbara, May 1989.

1990

- "Robust Adaptive Control: A Unified Approach," the 1990 Grainger Lectures on Foundations of Adaptive Control, University of Illinois, September 28 - October 1, 1990.
- "Decentralized Indirect Adaptive Control of Interconnected Systems," Rockwell International, Thousand Oaks, CA, October 11, 1990.
- "Learning and Convergence Analysis of Structured Networks," Rockwell International, Thousand Oaks, CA, October 11, 1990.

1991

- "Performance Improvement versus Robust Stability in Model Reference Adaptive Control", Berkeley Center for Systems and Control, University of California Berkeley, California, April 12, 1991.
- "Indirect Adaptive Control " University of California at Santa Barbara, May 28, 1991.

1992

- "Adaptive Identification and Control Using On-line Approximators: Neural Networks and Beyond," Distinguished Speaker Series, Dept. of Electrical Engineering, Texas A & M University, April 28, 1992.
- "Intelligent Highways," Center for Control Engineering & Computation, University of California at Santa Barbara, Nov. 3, 1992.

1993

- "Intelligent Vehicle on Automated Highways," Ford Motor Company, Sponsored by the IEEE Signal Proc. and Control Societies, May 13, 1993.
- "Classes of Model Reference Adaptive Control Schemes," Institute of Mathematics and Its Applications, University of Minnesota, April 12-16, 1993.

1998

- "Vehicle and Traffic Flow Control" , Georgia Institute of Technology, January 20, 1998, Distinguished Lecture Series

2000

- "The Use of Position Error Signal Measurements from Data and Servo Sectors for Disk Drive Servo Control" February 2, 2000, University of California Santa Barbara

2001

- "The Effect of Intelligent Cruise Control Vehicles in Mixed Traffic on the Environment and Traffic Flow Characteristics", Advanced Transportation Technologies Seminar Series, Intelligent Transportation Systems Institute, Center for Transportation Studies, University of Minnesota, October 9, 2001
- "Effects of ICC Vehicles on Mixed Traffic Flow" PATH Program-Wide Research Meeting, October 18, 2001

2002

- 'Adaptive Cruise Control (ACC) for Passenger Vehicles and Trucks: Effect on Traffic Flow Characteristics and Environment' University of California at Riverside, Department of Electrical Engineering

2007

- 'From Robust Adaptive Control to Practical Adaptive Control' University of California in Santa Barbara, Nov. 2, 2007

2009

- ‘Robust Adaptive Control: Accomplishments and Realities’, 2009 Monie A. Ferst Award Symposium in honor of Professor Kokotovic, Georgia Institute of Technology Chapter of Sigma Xi, October 26, 2009
- ‘Smart Vehicles and Intelligent Transportation Systems’ IET Honor Award presentation organized by the IET local chapter and the Cyprus University of Technology, Dec. 2, 2009

RESEARCH

Research Interests

- **Control Systems and Applications:** Robust Adaptive Control, Nonlinear and Adaptive Control, Neural Networks, Decentralized Control, Failure Detection, Isolation and Control Reconfiguration
- **Control Applications:** Control of Large Scale Structures, Control of Segmented Telescopes, Control of Disk Drives, Intelligent Flight Control Systems, Congestion Control in Computer and Communication Networks
- **Transportation Systems:** Vehicle Dynamics and Control, Adaptive Cruise Control, Collision Avoidance Systems, Automated Highway Systems, Traffic Flow Modeling and Control, Automated Container Terminals, Vehicle Routing and Dispatching, Advanced Transportation Technologies

Research Grants and Contracts

- **Faculty Research and Innovation Fund, Univ. of So. California**
Period: 6/83 - 6/84, Total Funds: \$2,200.00
Title: Robust Decentralized Adaptive Controllers
- **National Science Foundation**
Period: 9/84 – 9/85 Total Funds: \$58,334.00
Title: Development of Control Algorithms for Electrical Stimulation of the Human Leg (Subcontract under Rancho Los Amigos Hospital)
- **National Science Foundation**
Period: 1/84 - 1/87 Total Funds: \$75,000.00
Title: Asymptotic Analysis and Robust Design of Adaptive Control
- **NSF Presidential Young Investigator Award**
Period: 8/85 - 8/90 Total Funds: \$125,000.00
- **NSF Presidential Young Investigator Award and General Motors Matching Funds**
Period: 12/85 - 6/91 Total Funds: \$500,000.00
Title: Development of Robust Adaptive Control Techniques for Large Scale Systems
- **Ford Motor Company**
Period: 12/85 - 12/87 Total Funds: \$17,500.00
Title: Adaptive Control Algorithms
- **AT & T**
Period: 12/85 - 12/87 Total Funds: \$50,000.00
Title: Control Techniques for Packet Switching Networks
- **Collaborative Faculty Research and Innovation Fund, Univ. of So. California**
Period: 1/85 - 1/86 Total Funds: \$43,347.00
Title: Development of Laboratory for Modeling and Control
With Co-PIs G. Shiflett and H. Flashner
- **Sun Microsystems, Inc.**
Period: 10/86 - 10/87 Total Funds: \$14,600.00
Sun Workstation
- **Rockwell International**
Period: 6/87 - 8/88 Total Funds: \$154,607.00
Title: Adaptive Roll Control Studies of the ATW Wind Tunnel Model
(With M. Safonov as co-PI)

- **AT & T Information System**
Period: 7/88 - 7/90 Total Funds: \$145,000.00
Title: Adaptive Routing and Learning Automata in Networks
- **National Science Foundation**
Period: 9/88 - 7/89 Total Funds: \$11,551.00
Title: Development of Appropriate Adaptive Control Laws for Time-Varying Plant
- **Caltrans/PATH**
Period: 9/91-5/95 Total Funds: \$2,124,898.00
Title: Automated Vehicle Control
- **Ford Motor Company**
Period: 6/92 - 6/93 Total Funds: \$75,000.00
Title: Autonomous Intelligent Cruise Control
- **National Science Foundation**
Period: 8/92 - 8/94 Total Funds: \$100,000.00
Title: Adaptive Control: Design Trade-Offs, Robustness, Performance
- **FHWA**
Period: 10/93-9/94 Total Funds: \$586,000.00
Title: Precursor Systems Analysis of Automated Highway Systems
- **Taiwan Ministry of Economic Affairs**
Period: 7/93-6/96 Total Funds: \$450,000.00
Title: Identification and Control of Nonlinear Systems using Neural Networks
- **Caltrans/PATH**
Period: 2/95-7/97 Total Funds: \$175,000.00
Title: Evaluation and Analysis of Automated Highway System Concepts and Architectures
- **USTRANSCOM/California State University Long Beach**
Period: 10/95-9/96 Total Funds: \$187,415.00
Title: Center for Commercial Deployment of Transportation Technologies
- **Caltrans/PATH**
Period: 2/95-7/96 Total Funds: \$277,363.00
Title: Development and Experimental Evaluation of Autonomous Vehicles for Roadway/Vehicle Cooperative Driving
- **PATH**
Period: 1/95-12/95 Total Funds: \$49,000.00
Title: National AHS Consortium
Co-PI with R. Hall
- **Caltrans/PATH**
Period: 3/96-2/97 Total Funds: \$167,056.00
Title: Field Test of Vehicle-Mounted, Forward-Looking Range & Relative Velocity Sensor in Closed-Loop AVCS” (With Amerigon)
- **NASA/California State University Los Angeles**
Period: 9/96-8/99 Total Funds: \$300,000.00
Title: The Use of decentralized Control in Design of a Large Segmented Space Reflector
- **Caltrans/PATH**
Period: 10/96- 9/97 Total Funds: \$86,000.00
Title: Evaluation of Automated/Mixed Traffic
- **Caltrans/PATH**
Period: 11/01/97-06/30/98 Total Funds: \$42,000.00
Title: Evaluation and Analysis of Automated Highway System Concepts and Architectures

- **Caltrans/PATH**
Period: 01/01/98-08/31/99 Total Funds: \$78,356.00
Title: Mixed Automated and Manual Traffic
- **USTRANSCOM/California State University Long Beach**
Period: 3/1/98- 12/1999 Total Funds: \$450,000.00
Title: Center for Commercial Deployment of Transportation Technologies
- **USTRANSCOM/California State University Long Beach**
Period: 9/1999-8/00 Total Funds: \$427,000.00
Title: Center for Commercial Deployment of Transportation Technologies
- **National Science Foundation**
Period: 5/1/99-4/30/2002 Total Funds: \$240,000.00
Title: On-Line Learning and Control of Partially Known and Unknown Non-Linear Systems
- **Caltrans/PATH**
Period: 9/01/99-6/30/2001 Total Funds: \$190, 217.00
Title: Evaluation of the Effects of Intelligent Cruise Control Vehicles in Mixed Traffic
- **Caltrans**
Period: 1/99-1/2000 Total Funds: \$274,400
Title: Cooperation on Transportation Research
(Co-PI with R. Hall, J. Moore, E. Axelband and G. Giuliano)
- **DOT/METRANS**
Period: 7/1/99-8/31/2000 Total Funds: \$50,000
Title: Modeling and Route Guidance of Trucks in Metropolitan Area
- **NASA/California State University Los Angeles**
Period: 1/2000-12/2002 Total Funds: \$162,420.00
Title: Control of a Large Segmented Space Reflector Test Bed
- **DOT/METRANS**
Period: 9/1/2000-8/31/2001 Total Funds: \$47,000
Title: Dynamic Optimization of Cargo Movement by Trucks in Metropolitan Areas with Adjacent Ports
- **Caltrans/PATH**
Period: 1/01/01-6/30/2003 Total Funds: \$232,845
Title: Control of Heavy Duty Vehicles; Environmental and Fuel Economy Considerations
- **Air Force/California State University Los Angeles**
Period: 8/1/01- 7/31/04 Total Funds: \$800,000
Title: Multidisciplinary Analyses and Control of High Performance Air Vehicles
(Co-PI with M. Mirmirani, H. Boussalis and C. Wu)
- **DOT/METRANS**
Period: 7/1/2001-8/31/2002 Total Funds: \$50,000
Title: Automated Trucks on Dedicated Lanes for Cargo Movement
- **National Science Foundation/USDOT**
Period: 1/01/02-12/31/02 Total Funds: \$99,933
Title: Dynamic Cargo Assignment and Route Planning in the Trucking Industry
(Co-PI with R. Hall and M. Dessouky)
- **PATH/Caltrans**
Period: 10/01/03- 6/30/06 Total Funds: \$416,338.00
Integrated Roadway/Adaptive Cruise Control System: Safety, Performance, Environmental and Near Term Deployment Considerations
- **NASA/ California State University Los Angeles**
Period: 03/01/03-02/28/09 Total Funds: \$3,000,000
Title: Intelligent Flight Control

- (with M. Mirmirani)
- **METRANS**
 Period: 8/1/2003-3/31/2005 Total Funds: \$190,000
 Title: Cooperative Optimum Time Window Generation for Cargo Delivery/Pick up with Application to Container Terminals
 (with A. Chassiakos)
- **METRANS**
 Period: 8/15/2003-8/14/2004 Total Funds: \$90,000
 Title: A Novel Approach to Routing and Dispatching Trucks Based on Partial Information in a Dynamic Environment
 (with M. Dessouky)
- **DOT University Center**
 Period: 10/21/98-06/30/07 Total Funds: \$4,957,200.00
 Title: Metropolitan Transportation Center (METRANS)
 (with G. Giuliano (PI), R. Hall, J. Moore)
- **CALTRANS University Center**
 Period: 06/01/99-06/30/07 Total Funds: \$4,285,200.00
 Title: Metropolitan Transportation Center (METRANS)
 (with G. Giuliano (PI), R. Hall, J. Moore)
- **METRANS**
 Period: 10/01/2004-12/05/2005 Total Funds: \$150,000
 Title: Development of Methods for Handling Empty Containers with Applications in the Los Angeles/Long Beach Port
 (with A. Chassiakos)
- **DOT/METRANS**
 Period: 09/01/2005-08/31/2006 Total Funds: \$150,000
 Title: Simulation Test bed and Evaluation of Truck Movement Concepts on Terminal Efficiency and Traffic Flow
 (with A. Chassiakos)
- **National Science Foundation**
 Period: 08/15/05-07/31/2010 Total Funds: \$240,000
 Title: GOALI: Nonlinear Adaptive Control and Sensing for Precision Control with Application to Servo Control of Disk Drives
 (with Alvin Despain)
- **US DOT Research and Special Projects Administration**
 Period: 07/01/05-06/30/06 Total Funds: \$780,000.00
 Title: Metropolitan Transportation Center (METRANS)
 (with G. Giuliano (PI), J. Moore, M. Dessouky)
- **California Department of Transportation**
 Period: 07/01/05-06/30/06 Total Funds: \$780,000.00 (matching funds)
 Title: Metropolitan Transportation Center (METRANS)
 (with G. Giuliano (PI), J. Moore, M. Dessouky)
- **US DOT Research and Special Projects Administration**
 Period: 07/01/06-06/30/07 Total Funds: \$860,000.00
 Title: Metropolitan Transportation Center (METRANS)
 (with G. Giuliano (PI), J. Moore, M. Dessouky)
- **California Department of Transportation**
 Period: 07/01/06-06/30/07 Total Funds: \$860,000.00 (matching funds)
 Title: Metropolitan Transportation Center (METRANS)
 (with G. Giuliano (PI), J. Moore, M. Dessouky)

- **US DOT Research and Special Projects Administration**
 Period: 07/01/07-06/30/10 Total Funds: \$3,000,000.00
 Title: Metropolitan Transportation Center (METRANS)
 (with G. Giuliano (PI), J. Moore, M. Dessouky)
- **California Department of Transportation**
 Period: 07/01/07-06/30/10 Total Funds: \$3,000,000.00 (matching funds)
 Title: Metropolitan Transportation Center (METRANS)
 (with G. Giuliano (PI), J. Moore, M. Dessouky)
- **METRANS**
 Period: 02/01/2007-01/31/2009 Total Funds: \$359,507.00
 Title: Reconfiguration Strategies for Mitigating the Impacts of Port Disruptions
 (with A. Chassiakos)
- **Foundation for Research Promotion/University of Cyprus**
 Period: January 2007- December 2008, Total Funds:\$178,000
 Title: TrafficNet
 (with A. Pitsillides)
- **NASA/ California State University Los Angeles**
 Period: 03/01/07-02/28/09 Total Funds: \$442,500
 Title: Intelligent Flight Control
 (with M. Mirmirani)
- **METRANS**
 Period: 09/01/2008-02/28/2010 Total Funds: \$90,000
 Title: ‘Risks and Recoveries from Extreme Disruptions in Freight Transportation System in a Megacity: Case Study for the Greater Los Angeles Area’
 (with J.P. Bardet and J. Moore)
- **Foundation for Research Promotion/University of Cyprus**
 Period: December 2008- December 2010, Total Funds: \$130,000
 Title: Emergency Message Dissemination for Safety Applications in Vehicular Adhoc Networks (VANETS) (with A. Pitsillides)
- **Department of Homeland Security/CREATE**
 Period: January 2009-August 2009, Total Funds: \$50,465.00
 Title: Terminal/Roadway modeling and security scenarios analysis
- **Department of Homeland Security/CREATE**
 Period: August 2009-December 2009, Total Funds: \$50,609.00
 Title: Terminal/Roadway modeling and security scenarios analysis year 2
- **Department of Homeland Security/CREATE**
 Period: January 2010-December 2010, Total Funds: \$50,609.00
 Title: Terminal/Roadway modeling and security scenarios analysis year 3
- **California Department of Transportation/METRANS**
 USC Account no. 53-4503-3680
 Period: 01/01/2011-12/31/2011 Total Funds: \$90,000
 Title: Dynamic Variable Speed Limit Control: Design, Analysis and Benefits
- **VW Group of America**
 USC Account no. 53-4503-3483
 Period: 01/01/2011-12/31/2013 Total Funds: \$450,000
 Title: AUDI Urban Intelligent Drive Assist
- **Northrop Grumman Aerospace Systems**
 USC Account no. 22-1503-1300
 Period: July 2012 -2013, Total Funds: \$40K

- Title: Stability Margins in Adaptive Control

 - **Korean Maritime Institute**
 USC Account no. 22-1503-1500
 Period: 2012, Total Funds: \$30K
 Title: Survey of Logistics Technologies in the USA
 Investigator: P. Ioannou 100%
 - **Northrop Grumman Aerospace Systems**
 USC Account no. 22-1503-1300
 Period: 3/28/2011- 12/31/2012, Total Funds: \$45K
 Title: Stability Margins in Adaptive Control
 Investigator: P. Ioannou 100%
 - **Department of Homeland Security/CREATE**
 Period: January 2012-December 2012, Total Funds: \$52780.85
 Title: Terminal/Roadway modeling and security scenarios analysis
 Investigator: P. Ioannou 100%
 - **USDOT Federal Transit Administration**
 Period: September 1, 2011 - June 30, 2013, Total Funds: \$899864
 USC Proposal Number 15718.0007
 Title: "Technical and Safety Evaluation of the Southern California Regional Rail Authority Positive Train Control Deployment Project
 Investigators: Moore, J. E. (Principal-20%), Dessouky, M. M. (Co-Principal-20%), Ioannou, P. A. (Co-Principal-20%), Mitra, U. (Co-Principal-20%), Meshkati, N. (Co-Principal-20%)
 - **US Department of Transportation (US DOT) Research and Special Projects Administration (RSPA)**
 Award No. DTRS98-G-0019; USC Account No. 53-5701-6460,
 Period: July 1, 2007 -June 30, 2012., Total Funds: \$3583000
 Title: METRANS Transportation Center (National Center for Metropolitan Transportation Research)
 Investigators: Giuliano, G. (PI), Moore, J. E. (Co-PI), Ioannou, P. A. (Co-PI), Dessouky, M. (Co-PI),
 - **MOU Between the California Department of Transportation and the University of Southern California for Cooperation of Transportation Research**
 PCR# 13322.7802; USC Account No. 53-5701-4001,
 Period: July 1, 2007 -June 30, 2012, Total Funds: \$3583000
 Title: METRANS Transportation Center (National Center for Metropolitan Transportation Research)
 Investigators: Giuliano, G. (PI), Moore, J. E. (Co-PI), Ioannou, P. A. (Co-PI), Dessouky, M. M. (Co-PI)
 - **Volvo Research and Education Foundation**
 Period: September 2013- Sept. 2017; Total Funds \$3,499,999
 Title: METROFREIGHT The Local/Global Challenge of Urban Freight
 Investigators: Giuliano G. (PI), M. Dessouky (co-PI), P. Ioannou (co-PI)
 - **Northrop Grumman Aerospace Systems**
 USC Account no. 22-1503-1300
 Period: 2013-2014, Total Funds: \$45K
 Title: Stability Margins in Adaptive Control
 Investigator: P. Ioannou 100%
 - **US Department of Transportation (US DOT) Research and Special Projects Administration (RSPA)**
 Period: 2013 - 2017, Total Funds: \$6,127,768

Title: METRANS Transportation Center (National Center for Metropolitan Transportation Research)

Investigators: Giuliano, G. (PI), M. Boarnet (Co-PI), Ioannou, P. A. (Co-PI), Dessouky, M. (Co-PI).

- **National Science Foundation**

Period: 2015 - 2018, Total Funds: \$800,000

Title: CPS: Synergy: Cyber Physical Regional Freight Transportation System

Investigators: P. Ioannou (PI), Dessouky, M. (Co-PI), G. Giuliano (Co-PI)

- **DOT/METRANS**

Period: 2014 - 2016, Total Funds: \$100,000

Title: Optimum Routing of Freight in Urban Environments under Normal Operations and Disruptions using a Co-simulation Optimization Control Approach

Investigators: P. Ioannou (PI)

- **California Energy Commission**

Period: 2015, Total Funds: \$50,000

Title: Alternative and Renewable Fuel and Vehicle Technology Program

Investigators: P. Ioannou (PI)

- **DOT/UC Davis**

Period: 2014 - 2017, Total Funds: \$90,000

Title: Reducing Truck Emissions and Improving Truck Fuel Economy via ITS Technologies

Investigators: P. Ioannou (PI)

- **DOT/UC Davis**

Period: 01/01/2017 – 12/31/ 2017, Total Funds: \$100,000

Title: Intelligent Parking Assist for Trucks with Prediction

Investigators: P. Ioannou (PI)

- **University of California Riverside (Original AQMD)**

Period: 8/3/17- 12/31/2021, Total Funds: \$236,500

Title: Development and Application of Environmentally-Friendly Intelligent Transportation System (ECO-ITS) Freight Strategies

Contract no: 5345030935

Investigator: P. Ioannou (PI)

- **US-Department of Transportation**

Period: 10/01/17-9/30/22, Total Funds: \$5,175,800

Title: METRANS University Transportation Center

Contract no.5357017109.

Investigators: Giuliano, G. (PI), M. Boarnet (Co-PI), Ioannou, P. A. (Co-PI), Dessouky, M. (Co-PI).

- **CA-Department of Transportation**

Award Title: *Pacific Southwest Region University Transportation Center (PSR UTC) Consortium*

Sponsor Award Number: 65A0674

Period: 09/18/2018 to 01/31/2023

Amount: \$6,594,054.00

Investigators: Giuliano, G. (PI), M. Boarnet (Co-PI), Ioannou, P. A. (Co-PI), Dessouky, M. (Co-PI).

- **South Coast Air Quality Management District (AQMD)**

Period:11/3/17-11/2/19, Total funds: \$200,000

Contract no. 5345037278

Title: Project 2: Freight Load Balancing and Efficiencies In Alternative Fuel Freight Modes

- Investigators: Ioannou, P. A. (PI), Giuliano, G. (Co-PI), Dessouky, M. (Co-PI).
- **Los Angeles Worlds Airports**
 Period: Nov. 6, 2017- Nov. 5, 2019; Total funds: \$150k
 Title: Traffic Simulation Model for Los Angeles International Airport Area
 BTRC no. 233904 Investigator: P. Ioannou
 - **CA-Department of Transportation**
 Sponsor Award Number: 65A0674
 Period 2019-02-01 to 2020-01-31 Amount: \$100K
 Title: *Connected Autonomous Vehicles: Safety during Merging and Lane Change and Impact on Traffic Flow*". Investigator: P. Ioannou
 - **US-Department of Transportation**
 Sponsor Award Number: 69A3551747109
 Period: 2016-11-30 to 2022-09-30
 Amount: \$2,570,600.00
 Project Period: to 2022-09-30
 Amount: \$2,570,600.00
 Title: METRANS University Transportation Center
 Principal Investigator: Genevieve Giuliano
 Co-Principal Investigator(s): Marlon Boarnet, Maged Dessouky, Petros Ioannou
 - **National Science Foundation**
 Sponsor Award ID: CNS-1932615
 Budget Period of Performance: 2019-10-01 to 2022-09-30
 USC Account No: 5345032615
 Title: *CPS: Medium Collaborative Research: Smart Freight Transport Using Behavioral Incentives*
 Amount: \$1,109,871
 Principal Investigator: Petros Ioannou Co-Principal Investigator(s): Maged Dessouky, Genevieve Giuliano
 - **US-Department of Transportation**
 Award Number: 69A3551747109
 Title: METRANS University Transportation Center
 Period: 2019-10-01 to 2023-09-30
 Amount: \$15,584,200.00
 Principal Investigator: Genevieve Giuliano
 Co-Principal Investigator(s): Marlon Boarnet, Maged Dessouky, Petros Ioannou
 - **CA-Department of Transportation**
 Award Number: 65A0674
 Period: 2018-09-18 to 2023-01-31
 Amount: \$10,583,014.10
 Award Title: Pacific Southwest Region University Transportation Center (PSR UTC) Consortium
 Principal Investigator: Genevieve Giuliano
 Co-Principal Investigator(s): Marlon Boarnet, Maged Dessouky, Petros Ioannou
 - **CA-Department of Transportation**
 Award Number: 65A0674, Account: 53-4503-7524
 Period: 1/1/2020 to 6/30/2021. Amount: \$100K
 Title: *'Dynamic Routing of Trucks and Truck Platoons Using Real Time Simulators'*
 Investigator: P. Ioannou
 - **CA-Department of Transportation/NCST**

Award Number: 65A0686, Account: 53-4503-2775
Period: 1/1/2020 to 7/31/2021. Amount: \$100K
Title: *'Robust Design, Analysis and Evaluation Of Variable Speed Limit'*,
Investigator: P. Ioannou

- **CA-Department of Transportation/NCST**
Award Number: 65A0686, Account: 53-4503-3173
Period: 3/01/2020-8/31/2021. Amount: \$100K
Title: *'Optimizing Fuel Consumption and Pollutant Emissions in Truck Routing with Parking Availability Prediction and Working hours Constraints'*,
Investigator: P. Ioannou
- **Department of Transportation/PSR**
Award Number: MT-20-09, Account: 53-4503-7115
Period: 8/16/2020-8/15/2021. Amount: \$100K
Title: *'Highway Safety and Traffic Flow Analysis of Mixed Traffic With Connected and Non-Connected Vehicles'*,
Investigator: P. Ioannou
- **Department of Transportation/NCST**
Award Number: MT-20-05, Account: 53-4503-0506
Period: 8/16/2020-8/15/2021. Amount: \$100K
Title: *'Balancing of Truck Parking Demand by a Centralized Incentives/Pricing System'*,
Investigator: P. Ioannou
- **CA-Department of Transportation**
Award Number: 65A0674
Period: 2021-08-01 to 2022-12-31, Amount: \$310,089
Award Title: Task Order 042: Implementation of Action 6 of the California Sustainable Freight Action Plan (CSFAP) and California Freight Mobility Plan (CFMP) Phase 4: Tracking Economic Competitiveness
Principal Investigator: Genevieve Giuliano
Co-Principal Investigator(s): Marlon Boarnet, Maged Dessouky, Petros Ioannou
- **CA-Department of Transportation**
Award Number: 65A0686
Period: 11/1/2021-12/31/22, Amount: \$100K
Title: *Centrally Coordinated Schedules and Routes of Airport Shuttles with LAX Terminals as Application Area*
Investigator: P. Ioannou
- **Department of Transportation/PSR**
Period: 08/15/2022 - 08/14/2023. Amount: \$100K
Title: *Systematic and Provably Safe Control Design Methodology for Autonomous Vehicles*
Investigator: P. Ioannou
- **California Department of Transportation/NCST**
Award Number: 65A0686
Period: 3/1/2023-6/30/2024. Amount: \$100K
Title: *Learning Drivers' Utility Functions in a Coordinated Freight Routing System Based on Driver's Actions*
Investigator: P. Ioannou

Ph.D Students

Graduated a total of 40 students as of December 2022,
13 are in Academia and 5 are Fellows of IEEE. See list below:

1. **Manuel de Ponte**
"Decentralized Adaptive Control for Large Scale Systems"
Graduated July 1988
2. **Kostas Tsakalis**
"Adaptive Control of Time Varying Plants"
Graduated August 1988
Professor at Arizona State University
3. **John Reed**
"Robust Adaptive Control of Robotic Manipulators"
Graduated August 1988
4. **Jing Sun**
"Robust Adaptive Tuning of Controllers"
Graduated August 1989
Professor University of Michigan Ann Arbor
Fellow of IEEE 2003
5. **Gang Tao**
"Model Reference Adaptive Control: Stability, Robustness and Performance Improvement"
Graduated August 1989
Professor at University of Virginia in Charlottesville
Fellow of IEEE 2007
6. **Anastasios Economides**
"A Unified Game-Theoretic Methodology for the Joint Load Sharing, Routing and Congestion Control Problem"
Graduated December 1990
Professor at University of Macedonia
7. **Aniruddha Datta**
"Quantitative Analysis and Robust Design of Adaptive Control Systems: Robustness Performance Tradeoffs"
Graduated August 1991,
Professor at Texas A&M University
Fellow of IEEE, 2008
8. **Marios Polycarpou**
"Artificial Neural Networks for Control Applications"
Graduated September 1992
Professor at University of Cyprus
Fellow of IEEE 2006
9. **Farid Ahmed-Zaid**
"Control and Adaptation of Time Varying Nonlinear Systems"
Graduated summer 1993
With Ford Motor Company
10. **Michael Demetriou**
"Robust Adaptive Control for Infinite Dimensional Systems"
Graduated summer 1993
Professor at Worcester Polytechnic Institute , *Fellow of IEEE 2014*
11. **C.C. Chien**
"Intelligent Vehicles and Highway Systems"
Graduated summer 1994
Professor in Taiwan
12. **Youping Zhang**
" Robustness of Nonlinear Adaptive Control "

- Graduated summer 1996
13. **Humair Raza**
 “Infrastructure Managed Vehicle Following: A Control Perspective”
 Graduated summer 1997
www.tellabs.com, humair.raza@tellabs.com, phone 408-421-5698
 Santa Clara, CA
 14. **Alex Kanaris**
 “Automated Highway Systems: Concepts, Spacing Requirements and Performance”
 Graduated December 2000
 Research Engineer , Apple Computers, CA, USA
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 Graduated October 2005, Frederick University of Cyprus
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 ‘Practical Adaptive Control: Theory and Applications’
 Graduated February 2006, Advertising.com, San Jose, California
 23. **Manorama Gollakota**
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 Graduated December 2006, Aerospace Corporation, El Segundo, CA
 24. **Nazli Kahveci** ‘Robust Adaptive Control for Unmanned Aerial Vehicles’
 December 2007, Assistant Professor at Near East Technical University,
passed away June 5, 2015
 25. **Matthew Kuipers** ‘Multiple Model Adaptive Control with Mixing’
 April 1st, 2009 . Then Patent Lawyer.
 26. **Jason Levin** ‘Practical Adaptive Control for Systems with Flexible Modes, Disturbances, and Time
 Delays’, Defense date: May 18, 2009, With General Atomics.
 27. **Hwan Chang** ‘Reconfiguration strategies for mitigating the impact of port disruptions’
 Defense date: May 19, 2009
 28. **Ying Huo**, ‘Adaptive Reconfigurable Control with Mission Modification’
 Defense September 15, 2009
 29. **Yun Wang**, ‘Dynamic Variable Speed Limit Control: Design, Analysis and Benefits’
 Defense May 2011, With Experian

30. **Ross Gadiant**, ‘Adaptive Control With Aerospace Applications’
Defense March 2013, With Boeing Aerospace
31. **Afshin Abadi**, ‘Optimum Multimodal Routing Under Normal Condition and Disruptions’
Defense September 2014, Currently with Ferum Networks
32. **Vadim Butakov**, ‘Personalized Driver Assistance Systems Based On Driver/Vehicle Models’
Defense October 2014, Industry
33. **Saeid Jafari**, ‘High-Accuracy Adaptive Vibrational Control For Uncertain Systems’ August
18, 2015. Industry
34. **Tooraj Rajabioun**, ‘Intelligent Transportation Technologies in Urban Environments’ , March
2016, With Apple
35. **Yanbo Zhao**, ‘Intelligent Urban Freight Transportation’, June 2017, With Uber 5/1/2015
36. **Yihang Zhang**, ‘Integrated Control of Traffic Flow’ Oct. 2018, With Aptiv, California
37. **George Lympelopoulos**, ‘Distribute Adaptive Control with Application to Heating,
Ventilation and Air Conditioning Systems’ August 2021, Industry
38. **Filipe Vital**, ‘Integration of Truck Scheduling and Routing with Parking Availability’ Dec.
2021, Industry
39. **Faisal Alasiri**, ‘Control of Mainstream Traffic Flow: Variable Speed Limit and Lane Change’,
Dec. 2021, Academia
40. **Aristotelis Papadopoulos**, ‘Personalized Pareto-Improving Pricing-and-Routing Schemes
with Preference Learning for Optimum Freight Routing’, Dec. 2021, Industry (Facebook)

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B. Edited Books

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7. P.A. Ioannou, Automated Highway Systems, Plenum, 1997
8. P.A. Ioannou Intelligent Freight Transportation, CRC Press, 2008
9. P. A. Ioannou and A. Pitsillides Modelling and Control of Complex Systems, CRC Press, 2007

C. Chapters in Books

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2. P. A. Ioannou and K. S. Tsakalis, "Robust Discrete-Time Adaptive Control," in Adaptive and Learning Systems: Theory and Applications, Plenum Press, edited by K. S. Narendra, 1986, pp. 73-87.
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8. P. Ioannou, "Model Reference Adaptive Control" in The Control Handbook, Ed. W. Levine, CRC Press and IEEE Press, 1996
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22. Jafari S., Ioannou P. Robust Adaptive Disturbance Attenuation. In: Jiang ZP., Prieur C., Astolfi A. (eds) Trends in Nonlinear and Adaptive Control. Lecture Notes in Control and Information Sciences, vol 488, pp. 135-188, Springer

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D. Refereed Journal Papers

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1981

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14. K. S. Tsakalis and P. A. Ioannou, "Parameter Estimation and Pole-Placement Control of Time-Varying Plants," American Control Conference, Atlanta, Georgia, pp. 1636-1641, June 1988.

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4. 'Real-Time Parking Availability Prediction And Forecasting', T. Rajabioun and P. Ioannou, US Provisional Application 61/838,200, USC 13-793, MWE 028080-0921