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 (USC), Los Angeles, California. He currently holds the prestigious title of University Professor and the A.V. 'Bal' Balakrishnan Chair Professor in the same Department. He is the Director of the Center of Advanced Transportation Technologies an organized research unit at USC and holds courtesy appointments with the Departments of Aerospace and Mechanical Engineering and Industrial System Engineering. He is the Associate Director for Research for the University Transportation Center METRANS at the University of Southern California and the founder and Director of the Master Degree program on Financial Engineering at USC. He is also the Director of the Center for Responsible AI in Decision Making in Finance supported by CapitalOne 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 at USC. In 2022 he was inducted to the *National Academy of Engineering and elected Fellow of the National Academy of Inventors and became Foreign member of the Academy Europaea.* In 2023 he became Foreign Member of the European Academy of Sciences. In 2024 he was awarded the Lifetime Achievement Award of the IEEE ITS Society, he was designated as University Professor, highest recognition given by the University of Southern California and was awarded the ASME Rufus Oldenburger Medal and became Fellow of Asia-Pacific Artificial Intelligence Association.

He is currently the President Elect of the IEEE ITS Society. Prior to that he was Vice President (VP) for Membership, VP for Publications and served as 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 11 books and over 400 research publications in controls, vehicle dynamics, neural networks, nonlinear dynamical systems, intelligent transportation systems and Financial Engineering. 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 transportation and autonomous vehicles for a decade.

In his spare time he serves as a technical consultant to several automotive, aerospace and computer/electronics companies and as expert witness in the area of intelligent transportation systems that involves vehicle routing and traffic management for passenger, trucks, airport busses, shuttles and taxis, congestion control and traffic management technologies, autonomous vehicles, safety and human factors, vehicle accident analysis, collision avoidance systems as well as patent infringement cases.

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 Professor at University of Southern California, 2024- present
- 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
- President of IEEE ITS Society 2026-present
- Director of the Center for Responsible AI for Decision Making in Finance (CREDIF), 2024-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 Master 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 2025
- President Elect, IEEE Intelligent Transportation Systems Society 2025
- Distinguished Visiting Professor at KIOS Research and Innovation Center of Excellence at the University of Cyprus 2018, 2019
- Affiliated Professor at KIOS Research and Innovation Center of Excellence at the University of Cyprus, 2023-2025

Consulting

- Expert Witness for Vahan Mikayelyan Haffner Law Case No. O-228865, Antonio Lujak v. Alfa Romeo, roll off accident, 2023- ongoing
- Expert Witness for Friedman Rubin® PLLP Case No. 1:23-cv-03054-MKD, BURGESS vs Daimler Truck etc Truck accident case. Oct. 2023 - ongoing
- 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 90045Technical 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

2026

- President of the IEEE ITS Society 2026-present

2025

- President Elect of the IEEE ITS Society

2022 - 2024

- 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

- General Chair 2017 IEEE Intelligent Vehicles Symposium – June 11-14, 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
- Engineering Faculty Council member 2021-present
- Merit Review Committee Member Spring 2021, 2023

- Executive Committee member, Depart. Of Electrical Engineering, Spring 202
- 2024 USC Faculty Lifetime Achievement Award Committee

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 2001-23
- 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 2002-23
- 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 Committee 2003

AWARDS AND HONORS

2026

- **President of the IEEE ITS Society**

2025

- **President Elect of the IEEE ITS Society**
- **International Federation of Automatic Control, TC Award on Adaptive and Learning Systems**
- **Plenary Speaker**
  1. 5th Conference on Intelligent Traffic Systems and Smart City, August 22-24 2025 Chongqing, China, Title: Control of Vehicles and Traffic for Safety and Mobility in Smart Cities
  2. IEEE International Conference on Mechatronic and Embedded Systems and Applications (MSA), November 8-10, 2025, Macau China, Title:Management, Control and Optimization for Vehicles and Traffic for Safety, Mobility and Efficiency
  3. IEEE Research and Technologies for Society and Industry, Gammarth, Tunisia August 24-26, 2025
     Title: Control and Optimization of Vehicles and Traffic for Safety and Mobility
  4. Cyprus AI Conference, November 6, 2025
     Title: AI in Transportation
- **Distinguished Invited Lecture**
  Purdue Engineering Indianapolis , October 20, 2025
  Title: Control of Vehicles and Traffic for Safety and Mobility
- **Dean's Distinguished Speaker Lecture**
  Nanyang Technological University, Singapore
  Title: Control and Optimization of Vehicles and Traffic for Safety and Mobility

2024

- University Professor, highest recognition given by the University of Southern California
- ASME Rufus Oldenburger Medal, For fundamental contributions to robust adaptive control, vehicle control, and intelligent transportation systems; for leadership in academia; and for innovation in connecting research to industry
- Fellow of Asia-Pacific Artificial Intelligence Association
- IEEE ITS Society Lifetime Achievement Award "For pioneering and sustained contributions span the areas of vehicle automation, highway system automation, automated container terminals, intelligent freight transportation"
- IEEE ITS Society Distinguished Lecturer
- Plenary Speaker at the IEEE/CAA Journal of Automatica Sinica Conference 2024
  IEEE/CAA JAS Conference, Sept. 21, 2024

2023

- Foreign Fellow of the **European Academy of Sciences**
- Keynote speaker at International Conference on Intelligent Systems and consciousness Society, ITS2023, Patras, Greece, 2023
- Member of the Advisory Board of the Department of Automation at Tsinghua University 2023.

- Distinguished Speaker, City University of Hong Kong, Febr. 8, 2023

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**
- Fellow 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 om 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 Endowed Chair
- The 2016 IEEE Transportation Technologies Field 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.

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)

2024

- **Distinguished Lecture, Purdue University**, March 22, 2024
  Title: Control and Optimization for Safety and Mobility in Intelligent Transportation Systems
- **Distinguished Lecture, University of Michigan**, August 29, 2024
  Title: Vehicle and System Level Control for Safety and Mobility in Intelligent Transportation Systems
- **Distinguished Lecture, University of Washington**, May 14, 2024

Title: Control of Vehicles and Traffic for Safety, Mobility and Efficiency

2022

- **KIOS Distinguished Lecture,** University of Cyprus, 3/11/2022
  Title: Rejection of Vibrations with Unknown Frequencies using Robust and Adaptive Feedback

2019

- **H.S. Tsien International Distinguished Scientists,** Shanghai Jiao Tong University, China, 9/19/2019
  Title: Self-Driving Cars, Connectivity and Traffic Flow Control
- **KIOS Distinguished Lecture,** University of Cyprus, 4/8/2019
  Title: Adaptive Control of a Multi-Zone HVAC System
- **Distinguished Lecture**, Worcester Polytechnic Institute, 4/26/2019
  Title: Self-Driving Cars, Connectivity and Traffic Flow Control
- **Distinguished Lecture** University of Minnesota, Department of Mechanical Engineering on 11/20/2019

2018

- **Distinguished Lecture** KIOS, University of Cyprus, Nicosia, Cyprus, January 19, 2018
  Title: Traffic Flow Control: Closing the Loop

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

- **Learning:** Adaptive learning; Q-learning; Machine learning
- **Optimization:** Vehicle routing, co-simulation optimization control approaches
- **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**
  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
- **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/NCST**
  Contract number: DOT 69A3551747114
  Title: NCST-21-09 Coordinated Traffic Flow Control in a Connected Environment
  period of performance: 8/16/2021 - 6/30/2023
  total amount of funds: $100,000
  PI: Petros Ioannou
- **Department of Transportation/PSR**
  Contract number: 69A3551747109
  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 Task order 081
  Period: 6/1/2023-12/31/2024. Amount: $100K
  Title: *Learning Drivers' Utility Functions in a Coordinated Freight Routing System Based on Driver's Actions*
  Investigator: P. Ioannou
- **Department of Transportation/NCST**
  Period: 01/01/2024 - 12/31/2024. Amount: $100K

Title: *Electric Truck Fleet Management under Limited and Uncertain Charging Infrastructure Availability*
Investigator: P. Ioannou

- **California Department of Transportation/NCST**
  Award Number: 65A0686
  Period: 1/1/2024- 12/31/2024 Amount: $100K
  Title: *Battery Technologies for Current and Future Heavy-Duty and Transit Electric Vehicles*
  Investigator: P. Ioannou
- **Department of Transportation/University of California Davis,**
  Award number: NCST BIL/IIJA - 69A3551747114
  Period: 2022-2026, Amount: $1.8 million
  Title: *National Center for Sustainable Transportation*
  Investigators: Boarnet PI, Co-PIs Dessouky, Ioannou, Giuliano
- **Department of Transportation**
  Grant PSR BIL/IIJA - 69A3552348309
  Title: *Pacific Southwest Region University Transportation Center (PSR UTC) Consortium,*
  Period: 2022 - 2026. Amount: $15 million
  Investigators: Boarnet PI, Co-PIs Dessouky, Ioannou, Giuliano
- **California of Transportation/PSR**
  Period: 2025
  Amount: $100K
  Title: Intersection Control of Connected Vehicles for Mobility and Safety
  Investigator: P. Ioannou
- **California Department of Transportation/NCST**
  Period: 2025 Amount: $100K
  Title: Centrally Coordinated Parking and Route Planning for Trucks based on Load Balancing of Parking Spaces and Traffic
  Investigator: P. Ioannou
- **WAVEYE Inc.**
  Period: 1/17/26-4/17/2025, Amount : $33K
  Title: Multi-agent robotic system in dynamic environments
  Investigator: P. Ioannou
- **ULI/NASA led by the Embry-Riddle Aeronautical University**
  Period: 8/2025-8/2028, Amount: USC share $1.1 million
  Title: Safety-Aware Learning and Assured Autonomy for Aviation Applications
  Investigator: P. Ioannou
- **President's Sustainability Initiative Award, USC internal project,**
  Period: 2024-2025, Amount: Total award $249,992, My share $58,833
  Investigator: P. Ioannou

Ph.D Students

Graduated a total of 47 students as of December 2025,
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

15. **Arnab Bose**
"Design, Analysis and Evaluation of Semi-Automated Vehicles in Mixed Traffic"
Graduated August, 2000
16. **Kun Li**
"Modeling and Overlapping Decentralized Control of a Large Segmented Telescope Test Bed"
Graduated August, 2001
17. **Chin I Liu**
"Design, Modeling, Simulation and Optimization of Automated Container Terminals"
Graduated December 2001, Senior Design Engineer, Aplus Flash Technology, San Jose, CA 95131 USA
18. **Haojian Xu**
"Robust Adaptive Control of Nonlinear Systems with Guaranteed Error Bounds"
Graduated December 2002
19. Hossein Jula
"Modeling and Dynamic Optimization of Container Movement in Metropolitan Networks" Graduated August 2002
20. **Baris Fidan**
"Nonlinear and Adaptive Control of Time Varying and Multivariable Systems"
Graduated December 2002, University of Waterloo, Canada
21. **Marios Lestas**
'Intelligent Congestion Control for Computer Networks'
Graduated October 2005, Frederick University of Cyprus
22. **Jianlong Zhang**
'Practical Adaptive Control: Theory and Applications'
Graduated February 2006, Adveritising.com, San Jose, California
23. **Manorama Gollakota**
'GPS Receiver Improvements for Low Signal-to-Noise Ratio Applications'
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 Gadient,** '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 Lymperopoulos,** 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)
41. **Pengfei Chen '**Co-simulation Optimization Approach and its Application in Freight and Shuttle Movement' December 2023
42. **Tianchen Yuan,** 'Coordinated Freeway and Arterial Traffic Flow Control', May 2024
43. Muhammad Waqas, 'Systematic and Provably Correct Control Design Methodology for Autonomous Vehicles', May 2024
44. **Milad Pooladsanj**, 'Microscopic Traffic Control: Throughput Maximizing Scheduling in UAM Systems', Oct. 2024
45. **Jacob Stuart, '**Robust and Efficient Adaptive Control for Rejecting Sinusoidal Disturbances with Unknown Time-Varying Characteristics', May 7, 2025
46. **Zheyu (David) Wang**, Optimizing Urban Freight Routing:From Stochastic Routing Problems to Incentivized Coordination with Utility Learning, August 2025
47. **Fernando Valladares Monteiro,** Connected Autonomous Vehicles Coordination for Safe Lane Changes in Mixed-Traffic Highways, May 2025

PUBLICATIONS

A.

1. P. A. Ioannou and P. V. Kokotovic, Adaptive Systems with Reduced Models, Springer-Verlag, 1983.
2. K. S. Tsakalis and P. A. Ioannou, Linear Time Varying Plants: Control and Adaptation, Prentice-Hall, 1993.
3. P. A. Ioannou and J. Sun, Robust Adaptive Control, Dover publications 2012 (originally Prentice Hall, 1996),
4. P.A. Ioannou and B. Fidan, Adaptive Control Tutorial, SIAM – Society for Industrial & Applied Mathematics, TJ217.I628, ISBN 0-89871-615-2, 2006.
5. Petros Ioannou, Mathematics and Tools for Financial Engineering, SIAM, 2021

B. Edited Books

6. Khallil, H., J. Chow and P. Ioannou, Proceedings of Workshop on Advances in Control and its Applications, Springer Verlag, Lecture Notes in Control and Information Sciences, Vol.208, 1996
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
10. Petros Ioannou (Ed.) Adaptive Control Theory and Applications, IntechOpen Print ISBN 978-0-85466-713-0, Online ISBN 978-0-85466-712-3, eBook (PDF) ISBN 978-0-85466-714-7, **2024**
11. Petros Ioannou and Andreas A. Malikopoulos (Editors), '*Transportation Mobility in Smart Cities'* , Springer Nature Switzerland AG, Springer Tracts on

Transportation and Traffic, ISBN 978-3-031-64768-0, ISBN 978-3-031-64769-7 (eBook), https://doi.org/10.1007/978-3-031-64769-7, **2024**

C. Chapters in Books

1. P. A. Ioannou, "Design of Decentralized Adaptive Systems," in Advances in Large Scale Systems--Theory and Applications, Vol. 1, edited by J. B. Cruz, 1984, pp. 117-141.
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.
3. P. A. Ioannou and A. Datta, "Robust Adaptive Control: Design, Analysis and Robustness Bounds," in Grainger Lectures, edited by P. V. Kokotovic, Springer-Verlag, 1991.
4. A. Datta and P. A. Ioannou, "Decentralized Adaptive Control," in High Performance Systems Techniques and Applications, Academic Press, Vol. 53, edited by C. T. Leondes, 1992.
5. G. Tao and P. A. Ioannou, "Stability and Robustness of Multivariable Model Reference Adaptive Control Schemes" in High Performance Systems Techniques and Applications, Academic Press, Vol. 53, edited by C. T. Leondes, 1992.
6. Polycarpou M. and P. Ioannou, "Stable Nonlinear System Identification Using Neural Network Models", in Neural Networks in Robotics, pp. 147-164, Eds. G. Bekey and K. Goldberg, Kluwer Academic Publishers, 1993
7. P. Ioannou, "Model Reference Adaptive Control" in The Handbook of Brain Theory and Neural Networks Ed. M. Arbib, The MIT Press, 1995
8. P. Ioannou, "Model Reference Adaptive Control" in The Control Handbook, Ed. W. Levine, CRC Press and IEEE Press, 1996
9. P. Ioannou and A. Bose, "Automated Vehicle Control" Handbook of Transportation Science, Ed. R. Hall, pp.187-233, 1999, Kluwer Academic Publishers
10. P. Ioannou and E. Kosmatopoulos, "Adaptive Control", Encyclopedia of Electrical and Electronics Engineering, Ed. J.G. Webster, John Wiley and Sons, 1999

2002

11. Haojian Xu, Pirre Leung, Maj Mirmirani, Helen Boussalis and Petros Ioannou, 'Adaptive Sliding Mode Control of a Hypersonic Flight Vehicle' Ed. L. D'Amario, L. Sackett, D. Scheeres and B. Williams, Vo. 108, Part II Advances in the Astronautical Sciences, American Astronautical Society, pp. 1947-1961
12. Petros Ioannou and Arnab Bose 'Automated Vehicle Control' Handbook of Transportation Science, Ed. R. Hall, pp.193-241, 2002 2nd Edition , Kluwer Academic Publishers

2005

13. P. Ioannou and A. Bose 'Automated Vehicle Control' in The Future of Automated Freight Transport: Consepts, Design and Implementation Eds R. Konings,H. Priemus and P. Nijkamp, Edward Elgar Publishing, Inc. 2005, pp.113-129

2007

14. P. Ioannou, Y. Wang and H. Chang 'Modeling, Simulation and Control of Transportation Systems' Chapter 13 pp.407-437 in the book Modeling and Control of Complex Systems, CRC Press, 2007 ed. P. Ioannou and A. Pitsillides, 2007
15. M. Lestas, A. Pitsillides and P. Ioannou, 'Congestion Control in Computer Networks' Chapter 7 pp.203-246 in the book Modeling and Control of Complex Systems, CRC Press, 2007 ed. P. Ioannou and A. Pitsillides, 2007

2008

16. P. Ioannou, 'Introduction to Intelligent Freight Transportation' Chapter 1, pp.1-6 in the book Intelligent Freight Transportation, CRC Press, 2008 ed. P. Ioannou
17. Petros Ioannou and Hossein Jula, 'Automated Container Terminal Concepts' Chapter 2, pp 7-33, in the book Intelligent Freight Transportation, CRC Press, 2008 ed. P. Ioannou

18. Hossein Jula, Hwan Chang, Anastasios Chassiakos, and Petros Ioannou, ‘ Empty Container Reuse’ Chapter 13 pp. 211-227, in the book Intelligent Freight Transportation, CRC Press, 2008 ed. P. Ioannou

2010

19. Ioannou P.A. ‘Model Reference Adaptive Control’ The Control Handbook: Control System Advanced Methods, 2nd Edition Edited by W.S. Levine, CRC Press, 2011, pp.34-1 to34-19
20. Ioannou P. A. & Baldi S. ‘Robust Adaptive Control’ The Control Handbook: Control System Advanced Methods, 2nd Edition Edited by W.S. Levine, CRC Press, 2011, pp.35-1 to 35-21

2015

21. P. Ioannou, ‘Adaptive Control for Linear Time-Invariant Systems’, Chapter 3 in Encyclopedia of Systems and Control, Eds J. Baillieul and T. Samad, 2015

2021

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, 2021 Springer https://doi.org/10.1007/978-3-030-74628-5_6

2024

23. Pengfei Chen and Petros Ioannou, ‘ Centrally Coordinated Routing of Freight in Smart Cities’ chapter in book ‘*Transportation Mobility in Smart Cities’*, Springer 2024 edited by Petros Ioannou and Andreas A. Malikopoulos.
24. Petros Ioannou , ‘Introductory Chapter: Robust and Adaptive Control’ in book Ioannou (Ed.) Adaptive Control Theory and Applications, IntechOpen, **2024**

2025

25. Petros Ioannou, Robust Adaptive Control, Encyclopedia of Systems and Control Engineering, Elsevier

D. Refereed Journal Papers

1980

1. M. H. Patel and P. A. Ioannou, "Comparative Performance Study of Paddle-and Wedge-Type Wave Generators," Journal of Hydronautics, Vol. 14, No. 1, January 1980, pp. 5-9.

1981

2. P. A. Ioannou, "Robustness of Absolute Stability," International Journal of Control, 1981, Vol. 34, No. 5, pp. 1027-1033.

1982

3. P. A. Ioannou and P. V. Kokotovic, "An Asymptotic Error Analysis of Identifiers and Adaptive Observers in the Presence of Parasitics," IEEE Trans. on Automatic Control, Vol. 27, No. 4, August 1982, pp. 921-927.

1983

4. P. A. Ioannou and C. R. Johnson, Jr., "Reduced-Order Performance of Parallel and Series-Parallel Identifiers with Weakly Observable Parasitics," Automatica, Vol. 19, January 1983, pp. 75-80.

1984

5. P. A. Ioannou and P. V. Kokotovic, "Robust Redesign of Adaptive Control," IEEE Trans. on Automatic Control, Vol. 29, No. 3, March 1984, pp. 202-212.
6. P. A. Ioannou and P. V. Kokotovic, "Instability Analysis and Improvement of Robustness of Adaptive Systems," Automatica, Vol. 20, No. 5, September 1984, pp. 583-594.

1985

7. P. A. Ioannou and P. V. Kokotovic, "Decentralized Adaptive Control of Interconnected Systems with Reduced-Order Models," Automatica, Vol. 21, No. 4, July 1985, pp. 401-412.

1986

8. P. A.Ioannou, "Decentralized Adaptive Control of Interconnected Systems," IEEE Trans. on Automatic Control, Vol. AC-31, No. 4, April 1986, pp. 291-299.
9. P. A. Ioannou, "Robust Adaptive Controller with Zero Residual Tracking Errors," IEEE Trans. on Automatic Control, Vol. AC-31, No. 8, August 1986, pp. 773-776.
10. P. A. Ioannou and K. S. Tsakalis, "A Robust Direct Adaptive Controller," IEEE Trans. on Automatic Control, Vol. 31, No. 11, November 1986.
11. P. A. Ioannou, "Adaptive Stabilization of Not Necessarily Minimum Phase Plants," Systems and Control Letters, Vol. 7, No. 4, pp. 281-287, July 1986.

1987

12. P. A. Ioannou and G. Tao, "Frequency Domain Conditions for Strictly Positive Real Functions," IEEE Trans. on Automatic Control, Vol. AC-32, No. 1, pp. 53-54, January 1987.
13. K. S. Tsakalis and P. A. Ioannou, "Adaptive Control of Time-Varying Plants," Automatica, Vol. 23, No. 4, pp. 459-468, July 1987.

1988

14. P. A. Ioannou and J. Sun, "Theory and Design of Robust Direct and Indirect Adaptive Control Schemes,"International Journal of Control, Vol. 47, No. 3, pp. 775-813, 1988.
15. J. Reed and P. A. Ioannou, "Discrete-Time Decentralized Adaptive Control," Automatica, Vol. 24, No. 3, pp. 419-421, 1988.
16. G. Tao and P. A. Ioannou, "Strictly Positive Real Matrices and the Lefschetz-Kalman-Yakubovich Lemma," IEEE Trans. on Automatic Control, Vol. 33, No. 12, pp. 1183-1185, December 1988.
17. G. Tao and P. A. Ioannou, "Robust Model Reference Adaptive Control for Multivariable Plants," International Journal of Adaptive Control and Signal Processing, Vol. 2, pp. 217-248, 1988.
18. K. S. Tsakalis and P. A. Ioannou, "Adaptive Control of Time-Varying Plants: Simple Examples," Int. J. of Adaptive Control and Signal Processing, Vol. 2, pp. 291-309, 1988.

1989

19. K. S. Tsakalis and P. A. Ioannou, "Adaptive Control of Linear Time-Varying Plants: A New Model Reference Controller Structure," IEEE Trans. on Automatic Control, Vol. 34, No. 10, pp. 1038-1047, October 1989.
20. P. A. Ioannou and G. Tao, "Dominant Richness and Improvement of Performance of Robust Adaptive Control," Automatica, Vol. 25, No. 2, pp. 287-291, 1989.
21. J. S. Reed and P. A. Ioannou, "Instability Analysis and Robust Adaptive Control of Robotic Manipulators," IEEE Journal of Robotics and Automation, Vol. 5, No. 3, pp. 381-386, June 1989.
22. G. Tao and P. A. Ioannou, "Robust Adaptive Control of Bilinear Plants," Int. J. of Control, Vol. 50, No. 4, pp. 1153-1167, 1989.
23. G. Tao and P. A. Ioannou, "Robust Stability and Performance Improvement of Discrete-Time Multivariable Adaptive Control Systems," Int. J. of Control, Vol. 50, No. 5, pp. 1835-1855, 1989.

1990

24. G. Tao and P. A. Ioannou, "Persistence of Excitation and Overparametrization in Model Reference Adaptive Control," IEEE Trans. on Automatic Control, Vol. 35, No. 2, pp. 254-256, February 1990.
25. K. S. Tsakalis and P. A. Ioannou, "A New Indirect Adaptive Control Scheme for Time-Varying Plants," IEEE Trans. on Automatic Control, June 1990.
26. G. Tao and P. A. Ioannou, "Necessary and Sufficient Conditions for Strictly Positive Real Matrices," Proc. of the IEE, Vol. 137, No. 5, pp. 360-366, October 1990.
27. P. A. Ioannou, "Reply on 'Comments on the Robust Stability Analysis of Adaptive Controllers Using Normalizations,' by P. Khargonekar and R. Ortega," IEEE Trans. on Automatic Control, Vol. 35, No. 10, p. 1184, October 1990

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28. G. Tao and P. A. Ioannou, "Robust Adaptive Control of Plants with Unknown Order and High Frequency Gain," Int. J. Control, Vol. 53, No.3, March 1991, pp. 559-578.

29. G. Tao and P.A. Ioannou, "Robust Adaptive Control-A Modified Scheme," Int. J. Control, Vol.54, No.1, July 1991, pp.241-256.
30. F. Ahmed-Zaid, P. A. Ioannou, K. Gousman and R. Rooney, "Accommodation of Failures in the Flight Control System of the F-16 Aircraft Using Adaptive Control," IEEE Control Systems Magazine, Vol. 11, No. 1, Jan. 1991, pp. 73-78.
31. P.A. Ioannou and A. Datta, "Robust Adaptive Control: A Unified Approach," Proceedings of the IEEE, Vol. 79, No. 12, Dec. 1991, pp. 1735-1768.
32. A. Datta and P. A. Ioannou, "Decentralized Indirect Adaptive Control of Interconnected Systems," International Journal of Adaptive Control and Signal Processing, Vol.5, pp. 259-281, 1991.

1992

33. J. Sun and P. A. Ioannou, "Robust Adaptive LQ Control Schemes," IEEE Trans. on Automatic Control, Vol. 37, No. 1, Jan. 1992 pp. 100-106.
34. M. Polycarpou and P. A. Ioannou, "Learning and Convergence Analysis of Neural-Type Structured Networks," IEEE Trans. on Neural Networks, Vol. 3, No.1, Jan. 1992, pp. 39-51.

1993

35. G. Tao and P. A. Ioannou, "Model Reference Adaptive Control for Plants with Unknown Relative Degree," IEEE Trans. on Automatic Control, Vol. 38, No. 6, June 1993, pp. 976-982.
36. T. Tsao and P.A. Ioannou "On the Stability Proof of Adaptive Schemes with Static Normalizing Signals and Parameter Projection," IEEE Trans. on Automatic Control, Vol. 38, No. 1, 1993, pp. 170-173.
37. F. Giri, P.A. Ioannou and F. Ahmed-Zaid "A Stable Indirect Adaptive Control Scheme for First-Order Plants with No Apriori Knowledge on the Parameters,"IEEE Trans. on Automatic Control, Vol. 38, No. 5, May 1993, pp. 766-771.
38. M. Polycarpou and P. A. Ioannou, "On the Existence and Uniqueness of Solutions in Adaptive Control Systems," IEEE Trans. on Automatic Control, Vol. 38, No. 3, March 1993, pp. 474-479.
39. P. A. Ioannou and C. C. Chien, "Intelligent Cruise Control," IEEE Trans. on Vehicular Technology, Vol. 42, No. 4, Nov. 1993, pp. 657-672.

1994

39. A. Datta and P.A. Ioannou, "Performance Analysis and Improvement in Model Reference Adaptive Control, "IEEE Trans. on Automatic Control. Vol.39, No.12, December 1994, pp. 2370-2388.
40. P. Ioannou and Z. Xu, "Throttle and Brake Control Systems for Automatic Vehicle Following," IVHS Journal, Vol.1 (4), pp.345-377, 1994
41. Swaroop D, Hedrick J K, Chien C C, and Ioannou P. A. 'Comparison of Spacing and Headway Control Laws for Automatically Controlled Vehicles, Vehicle System Dynamics: International Journal of Vehicle Mechanics and Mobility, 1994, 23:1, 597

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42. A. Datta and P. Ioannou, "Directly Computable L2 and L-infinity Performance Bounds for Morse's Dynamic Certainty Equivalence Adaptive Controller" International Journal of Adaptive Control and Signal Processing, Vol.9, pp. 423-432, 1995
40. A. Economides, P. Ioannou and J. Sylvester "Dynamic Routing and Admission Control for Virtual Circuit Networks" Journal of Networks and Systems Management, Vol. 3, no. 2, 1995, pp.173-194
41. A. Economides, P. Ioannou and J. Sylvester "Adaptive Virtual Circuit Routing" Computer Networks and ISDN Systems 28, 1995 pp.1430-1438
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5. P. A. Ioannou, "Adaptive Control of Interconnected Systems in the Presence of Disturbances," The Third Yale Workshop on Applications of Adaptive Systems Theory, June 1983, pp. 164-167.
6. P. A. Ioannou and P. V. Kokotovic, "Improvement of Robustness of Adaptive Schemes," The Third Yale Workshop on Applications of Adaptive Systems Theory, June 1983. Invited paper, pp. 148-153.

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