

PacTrans Presents

Control of Vehicles and Traffic for Safety, Mobility and Efficiency

With Petros Ioannou



**TUES
5.14**

**Maple Hall Great Room (UW)
2:00 - 3:00PM PST**

This event is free & open to the public!

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<https://bit.ly/44he3af>



About the Seminar

Advances in connectivity and sensor technologies coupled with the availability of powerful hardware and software tools and internet are slowly changing the intelligence on vehicles and the way we manage and control traffic for improved mobility and safety. While on the vehicle level safety is the main priority on the traffic level efficiency and mobility is the primary goal. This brings up two levels of control one on the vehicle level which dictates the movement of vehicle and one on the system level which looks at the flows rather than what each vehicle is doing.

In this talk Ioannou will address some fundamental issues with vehicle safety, how it improved over the years and what are the main challenges as we move toward fully automated vehicles without on board drivers. He will address how smart vehicles can be connected with the infrastructure by serving as sensors and actuators in assisting the infrastructure in optimizing and managing traffic flows for better mobility and what is the importance of feedback control and optimization for safety and mobility.

Ioannou will present examples on vehicle and traffic levels how control and optimization can improve safety and mobility. He will address the importance of connectivity that will facilitate centrally coordinated approaches where system optimality becomes the main objective and how to mitigate the obstacle of cost in making infrastructure changes. Several examples of applications will be presented.

Meet the Speaker

Petros Ioannou is a Professor at the University of Southern California and holds the A.V 'Bal' Balakrishnan Endowed Chair in the Department of Electrical and Computer Engineering. He is the founder and Director of the Center for Advanced Transportation Technologies and co-founder of the University Transportation Center METRANS and Associate Director for the Pacific Southwest Region (PSR) University Transportation Center (UTC) at the University of Southern California. Dr. Ioannou was the recipient of the 2009 IEEE Intelligent Transportation Systems Society (ITSS) Outstanding Application Award and the 2009 IET Heaviside Medal for Achievement in Control. In 2012 he received the IEEE ITSS Research Award and in 2016 the IEEE Transportation Technologies Field Award. He is a member of the National Academy of Engineering, National Academy of Inventors and Foreign Member of the Academia Europaea and the European Academy of Sciences.

Dr. Ioannou is a Life Fellow of IEEE and Fellow of IFAC and AAAS. He is the author/co-author of 9 books and over 400 research papers in the area of controls and applications and intelligent transportation systems.



PacTrans Regional Transportation Seminar

PacTrans is the USDOT funded Region 10 UTC located at University of Washington.

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