



UC Irvine

Department of Civil and
Environmental Engineering

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SEMINAR
Series

Learning for Traffic Control

Presented by:

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John and Dorothy Shea Early Career in Civil
Engineering

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Friday, November 21, 3:00 PM - 4:20 PM PT
McDonnell Douglas Auditorium (MDEA)



Abstract: The increasing attention to data-driven traffic management and adjacent technologies has warranted revisiting transportation models from the perspective of online learning and control. We present our contributions in this context for canonical settings from demand and supply side traffic management. We show how appropriate combination of lifting and control of conventional traffic flow models can help to maintain system performance under unknown model parameters and sparse traffic measurements. On the demand side, we show that integrating revealed preference and nested decision paradigms can increase the effectiveness of emerging pricing and travel recommendation mechanisms. The findings are illustrated through case studies and controlled human subject experiments.

Bio: Ketan Savla is an associate professor and the John and Dorothy Shea Early Career Chair in Civil Engineering at the University of Southern California. His current research interest is in distributed optimal and robust control, dynamical networks, state-dependent queuing systems, and mechanism design, with applications in civil infrastructure and autonomous systems. His recognitions include NSF CAREER, IEEE CSS George S. Axelby Outstanding Paper Award, AACC Donald P. Eckman Award, and the IEEE ITS Outstanding Application Award. He serve(d) as an associate editor of the IEEE Transactions on Control of Network Systems, IEEE Control Systems Letters (L-CSS), and IEEE Transactions on Intelligent Transportation Systems. He currently serves as a senior editor of the L-CSS. He is also a co-founder and the chief science officer of Xtelligent, Inc.

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