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BIG energy seminar series

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SlrpEV: Smart LeaRning Pilot for Electric Vehicles

Dr. Scott Moura

Associate Professor | Director of eCAL

University of California, Berkeley

Date: Monday, November 16, 2020, 2pm – 3pm
Please join by Zoom: Join Zoom Meeting
https://cuboulder.zoom.us/j/4367455612

Abstract:

SlrpEV is a research and demonstration project that uses machine learning to optimize both the price and schedule of electric vehicle charging service. The unique defining feature of SlrpEV is that we explicitly learn and model human choices from a menu of charging service options. The objective is to minimize energy costs and emissions, while ensuring high quality-of-service by providing users agency on the charging service that best meets their needs. In this talk, we will discuss the discrete choice mathematical models, learning algorithms, and optimization framework used within this project. We will also present data generated from real-world EV operation at two sites: UC San Diego and UC Berkeley. The talk demonstrates an integration of machine learning, optimization, energy systems modeling, mobile app development, stated & revealed preference experiments.

Bio:

Scott Moura is the Clare and Hsieh Wen Shen Endowed Distinguished Professor in Civil & Environmental Engineering and Director of the Energy, Controls, & Applications Lab (eCAL) at the University of California, Berkeley. He is also a faculty member at the Tsinghua-Berkeley Shenzhen Institute. He received the B.S. degree from the University of California, Berkeley, CA, USA, and the M.S. and Ph.D. degrees from the University of Michigan, Ann Arbor, in 2006, 2008, and 2011, respectively, all in mechanical engineering. From 2011 to 2013, he was a Post-Doctoral Fellow at the Cymer Center for Control Systems and Dynamics, University of California, San Diego. In 2013, he was a Visiting Researcher at the Centre Automatique et Systèmes, MINES ParisTech, Paris, France. His research interests include control, optimization, and machine learning for batteries, electrified vehicles, and distributed energy resources.

Dr. Moura is a recipient of the National Science Foundation (NSF) CAREER Award, Carol D. Soc Distinguished Graduate Student Mentor Award, the Hellman Fellowship, the O. Hugo Shuck Best Paper Award, the ACC Best Student Paper Award (as advisor), the ACC and ASME Dynamic Systems and Control Conference Best Student Paper Finalist (as student and advisor), the UC Presidential Postdoctoral Fellowship, the NSF Graduate Research Fellowship, the University of Michigan Distinguished ProQuest Dissertation Honorable Mention, the University of Michigan Rackham Merit Fellowship, and the College of Engineering Distinguished Leadership Award.

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