SEMINAR

“Electric Vehicle Routing with Uncertain Charging Station Availability & Dynamic Decision-Making”

Prof. Justin Goodson
Saint Louis University, Usa

Chair: Prof. Luca Bertazzi

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We consider the problem of routing a single electric vehicle (EV) to a set of customers and allow the EV to perform mid-route recharging at charging stations which have uncertain availability. The uncertainty in charging station availability complicates the planning of mid-route recharging, which is necessitated by EVs' restricted driving ranges; longer recharging times for EVs compound this difficulty. We present a stochastic dynamic programming approach to route planning that hedges against these uncertainties, and we present our preliminary results. We advance the current electric vehicle routing literature through more realistic modeling of uncertainty and queuing behavior at charging stations.