

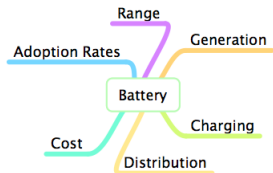
# Enabling Greener Driving A Computer Science Approach

Tommy Carpenter

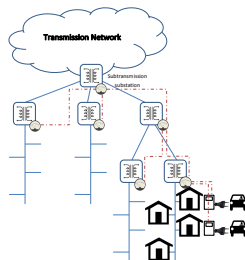
ISS4E Lab, School of Computer Science, UW

January 22, 2013

# Our Areas Of Research



Modeling



Control Theory



Optimization



Big Data

# EV Adoption Barriers: Range Anxiety & Price



Empty Battery

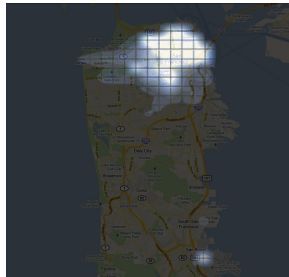


Emergencies



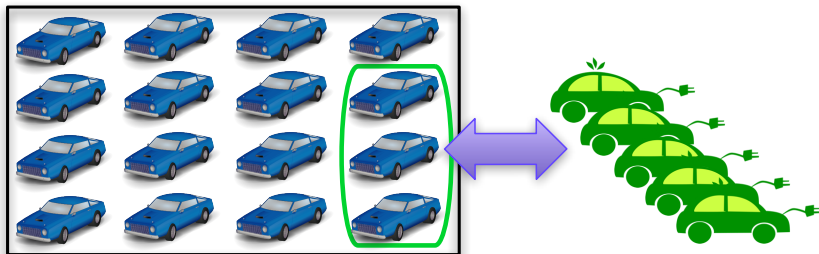
Resale Value? ROI? Worth it?

# Should taxi companies adopt EVs?



- Data oriented approach: 500+ taxis, 400,000+ fares
- Modeled battery levels, fuel displacement, missed fares, infrastructure placement, batteries required,...
- Revenue analysis: cost of cars, fuel, electricity, stations, batteries,... slightly profitable with prices in 2011

# Sizing Car Pools For Reduced Range Anxiety



- Dealerships\*, rental agencies, community lots.
  - ▷ \*can amortize into EV price, sold as “free”, ↑ EV sales
- Working with Community Carshare → data for locating and sizing

# EV Review Mining

MyNissanLEAF.com  
discussion forum

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It is currently Tue Jan 22, 2013 8:16 am

Board index All times are UTC - 8 hours [ DST ]

Forum	Topics	Posts	Last post
<b>MyNissanLeaf</b>			
 <b>Website/Forum Discussions</b> Questions /Comments/Suggestions about the website and forum go in here. This section is also for questions and info on how to use the My Nissan Leaf forum.	230	2548	Tue Jan 15, 2013 9:48 pm vrwl 
 <b>New Members &amp; Newbie Questions</b> New members - introduce yourself and ask any question you want.	476	7015	Tue Jan 22, 2013 8:10 am LTLFTcomposite 

- Programmatically mine thousands of EV reviews/discussions
  - ▷ How do opinions *temporally evolve*?
  - ▷ Are opinions *correlated* with other trends?
  - ▷ Identify *authoritative sources* of information
  - ▷ *Personalized product* recommendations