School of Data Science
香港城市大學
City University of Hong Kong

Hong Kong Institute for Data Science
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ONLINE SEMINAR

Obtaining Feasible and Near-optimal Optimal Power Flow Solutions in Real-time

Date: 24 March 2021 (Wednesday)

Time: 10:00am - 11:00am

Seminar link: https://cityu.zoom.us/j/95886576210

ABSTRACT

Optimization of electric power grids is a challenging, large-scale, non-convex problem. In order to optimize assets across these networks on fast operational timescales, the problem is typically simplified using linear models or other heuristics - resulting in increased cost of operation and potentially decreased reliability. Much work has been performed on improving these models through improved convexifications and other approximations, but in this talk, we take an alternate approach. Here, we use the abundance of data generated by grid operators or generated offline to train machine learning models that can calculate optimal grid setpoints without even solving an optimization problem. By using an interesting application of a neural network and post-processing procedure, feasible, near-optimal solutions to the AC Optimal Power Flow problem can be obtained in milliseconds.

Dr Kyri BAKER

GUEST SPEAKER'S PROFILE

Dr Kyri Baker received her B.S., M.S., and Ph.D. in Electrical and Computer Engineering from Carnegie Mellon University in 2009, 2010, and 2014, respectively. From 2015 to 2017, she worked at the National Renewable Energy Laboratory. Since Fall 2017, she has been an Assistant Professor at the University of Colorado Boulder, and is a Fellow of the Renewable and Sustainable Energy Institute (RASEI). Her research focuses on renewable energy integration by changing the way the electric power grid operates. In particular, she develops computationally efficient optimization and learning algorithms for energy systems ranging from building-level assets to transmission grids.

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All are welcome