Chase P. Dowling

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Homepage // GitHub

PhD Electrical & Computer Engineering, 2019
University of Washington, Advisor: Baosen Zhang
Dissertation: Applications of statistical and machine learning to civil infrastructure

BS Mathematics, 2012
University of Maryland, College Park

Skills Highlights:

-Python (numpy, pytorch, cvxpy, opencv)
-SQL, ElasticSearch
-Windows & Linux (Ubuntu, RedHat, Raspbian)
-Dept. of Energy Q (TS) Clearance

Select Publications:

- *C.P. Dowling,* T. Fujimoto, N. Hodas, **Policy Convergence Under the Influence of Antagonistic Agents in Markov Games.** Neural Information Processing Systems, December 2020
  C.P. Dowling, B. Zhang **Transfer Learning for HVAC System Fault Detection**, American Control Conference, July 2020
- *C.P. Dowling*, L.J. Ratliff, B. Zhang **Modeling Curbside Parking as a Network of Finite Capacity Queues**, IEEE Transactions on Intelligent Transportation Systems, March 2019
- *C.P. Dowling*, B. Zhang **Mitigation of Coincident Peak Charges via Approximate Dynamic Programming**, IEEE International Conference on Decision and Control 2019 (invited session)
- *C.P. Dowling*, D. Kirschen, B. Zhang **Coincident Peak Prediction Using a Feed-Forward Neural Network**, IEEE Global Conference on Signal and Information Processing 2018
- T. Fiez, L.J. Ratliff, *C.P. Dowling,* B. Zhang, **Data Driven Spatio-Temporal Modeling of Parking Demand**, Annual American Control Conference 2018
- *C.P. Dowling*, T. Fiez, L.J. Ratliff, B. Zhang, **Optimizing Curbside Parking Resources Subject To Congestion Constraints**, IEEE International Conference on Decision and Control 2017

Work Experience:

Scientist*,* Pacific Northwest National Laboratory, US Dept of Energy, September 2012---Present

Project work: Principal investigator for $2.95m award for urban transportation systems resource management project from DoE Vehicle Technologies Office under the Energy Efficient Mobility Systems focus area; managing team of researchers from Univ. of Washington, National Renewable Energy Laboratory, Lawrence Berkeley National Laboratory, and Lacuna Technologies. Supporting project work on basic research on multi-agent reinforcement learning and online classification (numpy, pytorch). While attending graduate school, early project work as part-time junior staff included 1) the security of power grid topologies, deployed in prototype tool for DoE; 2) basic research on large Twitter friend-follower and hashtag graphs (R, SQL). Team role primarily focused on publication writing and design and deployment of algorithms in HPC environments

Founder, Maryland Men's Crew Alumni Association, Inc. 501(c)(3), College Park, Maryland, 2012---Present

Summary: Founded and organized a 501(c)(3) non-profit incorporated in Maryland for the purpose of 1) financially supporting the University of Maryland Men's Rowing team, 2) creating opportunities for recently graduated rowers, and 3) connecting former teammates. Within 5 years of originally founding, the non-profit has organically grown a >$10,000 annual budget through fundraisers and biannual alumni events.

RA/TA, University of Washington, Dept. of Electrical and Computer Engineering, January 2016---December 2019

RA project work: Applications of machine learning to civil infrastructure in transportation and energy including: 1) estimating urban congestion from open source data sets (matlab, numpy, ES), 2) prediction of coincident peak timing in the ERCOT electrical market (numpy, pytorch, cvxpy), and 3) transfer learning for linear state estimators in HVAC systems (numpy, pytorch). Group role focused on NSF and DoE proposal editing, managing group's university HPC resources **TA**: EE PMP 559 Data Science for Power Systems, EE 501 Technical Writing

Communications Fellow (Volunteer) Pacific Science Center, Seattle, WA, May 2017---December 2020

Project work: Designed, built, and demonstrated a children's activity on network flow and an all-ages activity on the Monty Hall problem during weekend "Meet a Scientist" events aimed at illustrating the pervasiveness of mathematics in engineering.

Torrance Howard Tech Due Diligence Fellow, E8 Angels, Seattle, WA, September 2019---December 2020

Project work: Research and review clean energy startup applicants for early-stage venture capital investment. Investment recommendations were given for EV charging and AI startups.

Referee Services: IEEE Transactions on Smart Grids, IEEE Transactions on Intelligent Transportation Systems, IEEE Intelligent Transportation Systems Magazine, IEEE Transactions on Control of Network Systems, Transportation Research Parts A-D

Reference Contact:
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