Chase P. Dowling
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Homepage // **GitHub**

PhD Electrical & Computer Engineering, 2019 (expected)
University of Washington, Advisor: Baosen Zhang
Dissertation: Applications of machine learning to civil, infrastructural systems

BS Mathematics, 2012
University of Maryland, College Park

Languages and Environments:

-Python (numpy, pytorch, cvxpy), Matlab, R
-SQL, ElasticSearch
-Windows & Linux (Ubuntu, RedHat, Raspbian)
-SLURM and TORQUE HPC resource management

Select Publications:

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, 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**, American Control Conference 2018

C.P. Dowling, T. Fiez, L.J. Ratliff, B. Zhang, **Optimizing Curbside Parking Resources Subject To Congestion Constraints**, IEEE Conference on Decision and Control 2017

L.J. Ratliff, *C.P. Dowling*, E. Mazumdar, B. Zhang **To Observe or Not to Observe: Queuing Game Framework for Urban Parking**, IEEE Conference on Decision and Control 2016 (framework: github.com/cpatdowling/net-queue)

C.D. Corley, *C.P. Dowling*, S. Rose, T. McKenzie **SociAL Sensor Analytics: Measuring Phenomenology at Scale**, IEEE Intelligence and Security Informatics Conference 2013 (awarded best conference paper)

Work Experience:

Scientist, Pacific Northwest National Laboratory, US Dept of Energy, September 2012---Present (on educational leave)

Project work: Conduct basic research under the direction of the DoE Office and Science for government applications. Projects include 1) the security of power grid topologies, deployed in prototype tool for DoE; 2) basic research on large Twitter friend-follower and hashtag graphs for monitoring civil unrest. Team role primarily focused on publication writing and design and deployment of algorithms in HPC environments

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

RA project work: Applications of machine learning to civil infrastructure in transportation and energy including: 1) estimating urban congestion from open source data sets, 2) prediction of coincident peak timing in the ERCOT electrical market, and 3) transfer learning for linear state estimators in HVAC systems. Group role focused on NSF and DoE proposal writing and 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---Present

Project work: Designed, built, and currently demonstrate 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. Organize UW Electrical and Computer Engineering departmental booths during smart-cities themed "Curiosity Days" events.

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

Reference Contact: Dr. Baosen Zhang
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