BLAKE BORDELON

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EDUCATION

Harvard University *July 2019 - Present*
Program: PhD in Applied Mathematics
Washington University in St. Louis *August 2015 - May 2019*
Majors: Systems Engineering and Physics. Minor: Computer Science GPA: 4.0/4.0

PAPERS

Spectrum Dependent Learning Curves in Kernel Regression and Wide Neural Networks, B. Bordelon, A. Canatar, and C. Pehlevan, *International Conference of Machine Learning*, 2020.
Statistical Mechanics of Generalization in Kernel Regression, A. Canatar, B. Bordelon, and C. Pehlevan, *Arxiv* 2020 (under review).
Dispersive optical model analysis of Pb-208 generating a neutron-skin prediction beyond the mean field, M. C. Atkinson, M. H. Mahzoon, M. A. Keim, B. A. Bordelon, C. D. Pruitt, R. J. Charity, and W. H. Dickhoff, *Phys. Rev. C* 101, 044303, 2020.
Pre-Synaptic Pool Modification (PSPM): A supervised learning procedure for recurrent spiking neural networks, B.Bagley, B. Bordelon, B. Moseley, R. Wessel, *PLOS ONE* 15(2): e0229083, 2020

PRESENTATIONS AND SUMMER SCHOOLS

Robustness Efficiency Trade-offs in Population Coding Neuromatch 2020.
Optimal Population Spectrum for Robust Linear Readout, Cosyne 2020.
Generalization of Wide Neural Networks Harvard Q-Bio Seminar 2020.
CNeuro: Computational Neuroscience Summer School, Tsinghua University, August 2019.

AWARDS

McKelvey School of Engineering Valedictorian *May 2019*
Nishi Luthra Senior Prize in Physics *May 2019*
Systems Engineering Student of the Year Award *May 2017-2019*

TEACHING EXPERIENCE

Teaching Fellow for APMTH 226: Neural Computation *August 2020-Present*
Teaching Assistant for Engineering Math *August 2017-May 2018*

RELEVANT COURSEWORK

Neural Computation, Advanced Machine Learning, Physical Mathematics, Computing At Scale, High Dimensional Statistics, Mathematical Physics, Probability and Stochastic Processes, Control Systems

PROGRAMMING LANGUAGES

Strong Proficiency in Python (numpy, scipy, JAX, Pytorch, etc). Proficient in Matlab and C++.

RESEARCH INTERESTS

Deep Learning, Population Codes, Statistical Physics, Kernel Methods, Optimization, Representations