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RESEARCH INTERESTS	Machine Learning for Healthcare, Sequential/Temporal Models for Physiological Time Series, Blood Glucose Forecasting and Control, Sequential Self-Supervision, Reinforcement Learning for Understanding and Improving Decision Making
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EDUCATION

University of Michigan, Ann Arbor, MI

Ph.D., Computer Science and Engineering, *Expected*: Summer 2020

Research Area: Representing and Learning with Physiological Time Series. Advised by Jenna Wiens, Ph.D

M.S., Computer Science and Engineering, **GPA: 3.952**, April 2017

Prelim Topic: *Contextual Motifs: Increasing the Utility of Motifs Using Contextual Data* , advised by Jenna Wiens, Ph.D

University of Massachusetts, Amherst, MA

B.S., Mathematics and Computer Science (Dual Major), **GPA 3.992**, May 2015

Thesis Topic: *Cell list algorithms and stochastic integration for nonequilibrium molecular dynamics*, advised by Matthew Dobson, Ph.D

EXPERIENCE

Research Assistant September 2015-Present

Department of Computer Science and Engineering, University of Michigan
Supervisor: Jenna Wiens, Ph.D

- Developed deep models for blood glucose forecasting (KDD '18)
- Created new time series representation technique (Oral at KDD '17)
- Used deep RL to analyze NBA player tracking data (SSAC '18)
- Developed new supervision strategies for time-series (preparing publication) and multi-class classification (IJCAI '19)
- Created deep reinforcement learning algorithm that significantly improved closed loop blood glucose control algorithms (under review at MLHC '20)

PhD Research Intern at MSR June-September 2018

Adaptive Systems Group, *Supervisor:* Eric Horvitz
Developed lifelong learning methods to handle cumulative concept drift. Applying developed techniques for blood glucose control.

SDE Intern at Amazon May-August 2015

AWS Storage Gateway Team, *Supervisor:* John Jamail
Developed enterprise tools to aid in region deployments and automate VIP management

Undergraduate Research Assistant June 2013-May 2015

Department of Mathematics and Statistics, University of Massachusetts
Supervisor: Matthew Dobson, Ph.D

- Stochastic integration algorithm for non-equilibrium environments (Thesis)
- Novel extensions to the cell list algorithm, reducing runtime from $O(N^2)$ to $O(N)$ (Comput. Phys.)

PEER REVIEWED
PUBLICATIONS

1. **Fox, I.** and Wiens, J. “Advocacy Learning”, *IJCAI '19*.
2. **Fox, I.**, Ang, L., Jaiswal, M., Pop-Busui, R., and Wiens, J. “Deep Multi-Output Forecasting: Learning to Accurately Predict Blood Glucose Trajectories”, *KDD '18*. 1387-1395
3. Wang, J. *, **Fox, I. ***, Singh, S., and Wiens, J. “Doubling Down: A Deep Reinforcement Learning Approach to Studying the Double Team in the NBA”. *MIT Sloan Sports Analytics '18*.
4. **Fox, I.**, Ang, L., Jaiswal, M., Pop-Busui, R., and Wiens, J. “Contextual Motifs: Increasing the Utility of Motifs using Contextual Data.” *KDD '17*. 155-164. **Oral Presentation**
5. Dobson, M., **Fox, I.**, Saracino, A., “Cell list algorithms for nonequilibrium molecular dynamics”, *Journal of Computational Physics*, Volume 315, 211-220 2016

PUBLICATIONS IN
SUBMISSION

1. **Fox, I.**, Lee, J., Busui, R., and Wiens, J. “Deep Reinforcement Learning for Closed-Loop Blood Glucose Control”, under review at *MLHC '20*.

AWARDS,
PRESENTATIONS,
AND SERVICE

Received Honorable Mention for NSF GRFP

March 2017

Presentations

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- Graduate Student Seminar Series on Data Science, Ann Arbor, MI November 2019
- Michigan AI Symposium, Ann Arbor, MI October 2019
- IJCAI 2019, Macau, CN August 2019
- KDD 2018, London, U.K. August 2018
- Exercise and Sports Science Initiative, Ann Arbor, MI October 2018
- MIDAS Symposium, Ann Arbor, MI May 2018
- MICHAMP invited talk, Ann Arbor, MI March 2018
- Sloan Sports Analytics Conference, Boston, MA January 2018
- DCM&B Tools and Technology Seminar, Ann Arbor, MI February 2017
- KDD 2017, Halifax, N.S. June 2017
- M-CHAMP invited talk, Ann Arbor, MI January 2017
- MIDAS Symposium, Ann Arbor, MI. December 2016
- University of Massachusetts REU Symposium, Amherst, MA August 2014
- Yale REU Regional Symposium, New Haven, CT August 2013

Teaching and Service

- Reviewed for ICML 2020
- Reviewed for AAAI 2020
- Reviewed for NeurIPS 2019
- NeurIPS ML4H Program Committee October 2018
- Reviewed for AAAI October 2018
- Reviewed for ICML March 2018
- Intro to ML Guest Lecturer November 2017
- NeurIPS ML4H Program Committee October 2017
- Exploring Graduate Studies Workshop Panel Leader September 2016, 2017, 2019
- Volunteer Coordinator and Curriculum Developer for Girls Inc Women in Computing Seminar Series September-December 2014
- Teaching Assistant, Theory of Computation September-December 2014