

# Jeeheh Oh, PhD Candidate

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I am a recently defended, 6<sup>th</sup> year graduate student in computer science at the University of Michigan. My research focuses on the application of novel machine learning methods to the electronic health record (EHR) to improve patient care. I am particularly interested in the development of architectures to leverage time series and network data in the EHR.

## Education

### University of Michigan, Ann Arbor

PhD, Computer Science and Engineering

2015 - 2021

MS, Computer Science and Engineering

2015 - 2017

Thesis Adviser: Jenna Wiens

GPA: 3.96/4.00

### University of California, Los Angeles

2008 - 2012

Double Major BS Mathematics, BA Economics, Minor Asian Languages

GPA: 3.83/4.00

## Research Experience

### Research Assistant Professor Jenna Wiens

2015 - Present

Development of novel machine learning algorithms for leveraging clinical time-series data. Focused on novel architectures that can learn temporal invariances, time series alignment, as well as adapt to time varying tasks. Our work has applications in healthcare. We focus on clinically relevant tasks that utilize the electronic health record (EHR) to improve patient care.

### Statistics and Machine Learning Internship Netflix

Summer 2019

Application of recurrent neural networks and transformer networks on time-series data to forecast watch statistics for titles before and during launch on service.

### Project Analyst II FSC Group/Nexant

2012 - 2015

Application of statistical analysis (e.g., panel regressions, propensity score matching, randomized control trials) to evaluate utility resources, analyze survey results and provide evidence for litigation cases. Worked with large Smart Meter time series datasets at the million/billion observation level.

Helped organize a special topics seminar class of 11 members, scheduling meeting times and locations. Created diagrams, proofread, and researched reference papers for Economic research papers.

## Publications and Presentations

### Peer Reviewed Conferences and Journals

- **Jeeheh Oh\***, Jiaxuan Wang\*, Shengpu Tang, Michael Sjoding, Jenna Wiens, Relaxed Weight Sharing: Effectively Modeling Time-Varying Relationships in Clinical Time-Series, *Machine Learning for Healthcare Conference (MLHC)*, August 2019.
- **Jeeheh Oh**, Jiaxuan Wang, Jenna Wiens, "Learning to Exploit Invariances from Clinical Time-Series Data using Sequence Transformer Networks", *Machine Learning for Healthcare Conference (MLHC)*, August 2018.
- Jiaxuan Wang, **Jeeheh Oh**, Haozhu Wang, Jenna Wiens, "Learning Credible Models", *ACM SIGKDD Conference on Knowledge Discovery and Data Mining*, August 2018.
- **Jeeheh Oh\***, Maggie Makar\* et al., "A Generalizable, Data-Driven Approach to Predict Daily Risk of Clostridium difficile Infection at Two Large Academic Health Centers", *Infection Control and Hospital Epidemiology (ICHE)*, March 2018.

### Workshop Presentations and Seminars

- Jeeheh Oh, "A Data-Driven Approach to Estimating Infectious Disease Transmission from Graphs: A Case of Class Imbalance Driven Low Homophily", *ACM CHIL Workshop 2021*, Poster.
- Jeeheh Oh, "Learning to Exploit Invariances in Clinical Time-Series Data using Sequence Transformer Networks", *Microsoft Research AI Breakthroughs Workshop*, September 2018, Poster.
- Jeeheh Oh, "Learning to Exploit Invariances in Clinical Time-Series Data using Sequence Transformer Networks", *Michigan Institute for Data Science (MIDAS) Health Sciences Challenge Symposium*, May 2018, Poster.
- Jeeheh Oh, Evan Snitkin, Vincent Young, "Data-Driven Tools to Curb the Spread of Healthcare-Associated Infections", *MCubed Symposium*, November 2017, [\[Video Link\]](#), Presentation.
- Jeeheh Oh, Maggie Makar, "A data-driven approach to predict daily risk of Clostridium difficile infection at two large academic health centers", *Infectious Disease Week*, October 2017, Poster.
- Jeeheh Oh, "A Data-Driven Approach to Predict Daily Risk of *Clostridium difficile* infection", *Center for Healthcare Engineering & Patient Safety (CHEPS) Healthcare Summit*, June 2017, Poster.
- Jeeheh Oh, "Multivariate Time Series Data in Healthcare: Challenges & Insights from Two Case Studies", *NeurIPS MLHC Workshop*, December 2015, Poster.

- Jeeheh Oh, "Selected Topics From an Evaluation of a Home Energy Report Program in California", Western Load Research Association (WLRA), September 2013, Presentation.

## Other Projects

### **Sepsis Prediction in the Presence of Intervention Censoring** Winter 2016

Replication project based on the study done in "*Kirill Dyagilev and Suchi Saria. Learning (predictive) risk scores in the presence of censoring due to interventions. Machine Learning, 2015.*" Predicts a sepsis severity score on MIMIC III electronic health record data using a soft max-margin ranking.

### **Mining Insights from Hardware Errata Documents** Fall 2016

Used errata documentation to identify interesting patterns and conclusions about product bugs, such as common sources of errors. Created a database of over 2,000 different ARM errata and experimented with natural language processing methods ranging from non-negative matrix factorization to Word2Vec.

## Extracurricular and Volunteering

### **Computer Science Graduate Students (CSEG)** University of Michigan

- Tea Chair: Organize weekly social Tea Times for department 2018 - 2019
- Social Chair: Organize monthly social events for graduate students 2017 - 2018

### **Brazilian Zouk Dance Club** University of Michigan 2018 - 2020

- Secretary: Apply for funding to pay for room rentals and instructors.

### **Ensemble of Computer Science and Engineering Ladies** University of Michigan

- Treasurer: Apply for funding, accounting, reimbursements 2016 - 2018