

Tom Hartvigsen

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EDUCATION

WORCESTER POLYTECHNIC INSTITUTE

PH.D. IN DATA SCIENCE

Expected May 2021 | Worcester, MA
Advisor: Dr. Elke Rundensteiner

SUNY GENESEO

BA IN APPLIED MATHEMATICS

Minor in BioMathematics
May 2016 | Geneseo, NY

LINKS

LinkedIn:// [in/thartvigsen](#)

GitHub:// [thartvigsen](#)

COURSEWORK

GRADUATE

Knowledge Discovery and Data mining
Statistical Learning
Deep Learning
Big Data Management
Database Management Systems
Introduction to Data Science
Business Intelligence

UNDERGRADUATE

Modeling Biological Systems
Combinatorics
Differential Equations
Probability and Statistics
Linear Algebra
Calculus I-III

SKILLS

PROGRAMMING

Python - Deep Learning: **TensorFlow**, **PyTorch**, Machine Learning: **Scikit-Learn**, **Numpy** • R - Statistical Learning, Graph mining, ggplot2 • **Shell** • **TEX** • **SQL** - **PostgreSQL**

AWARDS

2016- GAANN Research Fellowship
U.S. Department of Education

EXPERIENCE

WPI | GAANN RESEARCH FELLOW

August 2016 – present | Worcester, MA

- Working with Dr. Elke Rundensteiner and Dr. Xiangnan Kong on sequential decision making for time series classification.

UNIVERSITY OF ARIZONA | RESEARCH EXPERIENCE FOR UNDERGRADUATES INTERN

June 2015 – Aug 2015 | Tucson, AZ

- School of Natural Sciences and the Environment advised by Dr. Shirley Papuga.
- Trained decision trees to segment images of Creosote Bushes with the aim of assessing phenological changes with respect to drought seasons (MATLAB).
- Presented findings at the Undergraduate Research Opportunities Consortium (UROC) in August 2015.

RESEARCH

DATA SCIENCE RESEARCH GROUP Aug 2016 – Pres. | Worcester, MA

- Developing recurrent models for sequential classification tasks (PyTorch).
- Current work: **early time series classification** with application to data-driven improvements for healthcare.
- Developed CREST, a python-driven machine learning tool for infection detection in hospitals using SVMs, Random Forests, and Logistic Regression (Numpy/Scikit-Learn).

BIOMATHEMATICS INNOVATION GROUP Jan 2013 – May 2016 | Geneseo, NY

- Studied networks driven by differential equation models to model infection spread (R). Scraped song lyrics for sentiment analysis (Python). Scraped IMDB to build graphs relating films to one another (Python).
- Interdisciplinary focus, mentored younger students, brought 6 projects to undergraduate research conferences.

PUBLICATIONS

- Teeple, E., **Hartvigsen, T.**, Sen, C., Rundensteiner, E. **Risk Stratification and Diagnostic Performance of a Machine Learning Algorithm for Clostridium Difficile Detection Using Electronic Health Records Data** . Currently in review at the Journal of Infection Control and Hospital Epidemiology.
- **Hartvigsen, T.**, Sen, C., Brownell, S., Teeple, E., Kong, X. and Rundensteiner, E. (2018). **Early Prediction of MRSA Infections using Electronic Health Records** . In Proceedings of the 11th International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC 2018) - Volume 5: HEALTHINF, pages 156-167, ISBN: 978-989-758-281-3. **Nominated for Best Student Paper** .
- Sen, C., **Hartvigsen, T.**, Claypool, K., Rundensteiner, E. (2017). **CREST - Risk Prediction for Clostridium Difficile Infection Using Multimodal Data Mining** . ECML/PKDD 2017.