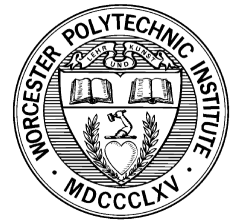


# Thomas Hartvigsen

Ph.D. Student

Worcester, MA, USA

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## Education

- **Worcester Polytechnic Institute** Worcester, MA  
*Ph.D. Data Science* 2016 - Present
  - Advisor: Dr. Elke Rundensteiner
  - GPA: 3.83/4.00
  - Related coursework: Deep Learning, Statistical Learning, Knowledge Discovery and Data Mining, Big Data Management, Database Management Systems, Business Intelligence.
- **SUNY Geneseo** Geneseo, NY  
*B.A. Applied Mathematics* 2012 - 2016
  - Minor in BioMathematics
  - GPA: 3.09/4.00

## Experience

- **Graduate GAANN Research Fellow** Worcester Polytechnic Institute  
*Recurrent Models for Sequential Data* Aug. 2016 - Present
  - Focus: recurrent neural network-based models to solve classification tasks for sequential data.
  - Current work: Early time series classification with application to infection diagnosis.
- **Research Experience for Undergraduates Intern** University of Arizona  
*Phenological Image Segmentation via Machine Learning* Jan. 2015 - May 2016
  - NSF-funded research opportunity in the School of Natural Sciences and the Environment.
  - Segmented images with decision trees, studied how Creosote bushes change over drought seasons, found no relationship between ground-level photographs and satellite-level LIDAR imaging.
- **Research and Teaching Assistant** SUNY Geneseo  
*Math/Biology/English Departments* Aug. 2013 - May 2016
  - Teaching assistant: Modeling Biological Systems/BioStatistics. Created and administered homework assignments, led two-hour workshop on percolation modeling.
  - Research assistant: Modeled infection spread on graphs, scraped graphs from IMDB, mined song lyrics for text features useful for discriminating genres and artists.

## Programming Skills

- **Machine Learning and Data Analytics:** Python (PyTorch, TensorFlow, Scikit-Learn, Numpy, Pandas), R.
- **Data Visualization:** Matplotlib, Tableau, GGPlot2
- **Database Management:** PostgreSQL, MySQL

## Publications

- **Hartvigsen, T.**, Sen, C., Rundensteiner, E. Detecting MRSA Infections by Fusing Structured and Unstructured Electronic Health Record Data. In submission to the Journal of Communications in Computer and Information Science, Springer.
- Sen, C., **Hartvigsen, T.**, Kong X., Rundensteiner, E. Patient-level Classification on Clinical Note Sequences Guided by Hierarchical Attention. Currently in submission to IEEE ICDM 2018.
- 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. In submission to the Journal of Health Services Research and Managerial Epidemiology.
- **Hartvigsen, T.**, Sen, C., Brownell, S., Teeple, E., Kong, X. and Rundensteiner, E. Early Prediction of MRSA Infections using Electronic Health Records. 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. CREST - Risk Prediction for Clostridium Difficile Infection Using Multimodal Data Mining. ECML/PKDD 2017.

## Awards & Honors

People's Choice Award for best poster, Graduate Research Innovation and Exchange . . . . .	2017-18
Government Assistance in Areas of National Need Fellowship . . . . .	2016-18