Justin Payan

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Education and Qualifications

2018-	Ph.D.	University of Massachusetts Amherst Advisor: Andrew McCallum
2015-2018	M.S.	University of Georgia Advisor: Frederick Maier
2013-2017	B.S./B.A.	University of Georgia Foundation Fellowship (UGA's top academic scholarship, <2% acceptance)

Research

Refereed Publications

1. Justin Payan and Andrew McCallum. Document Representations Using Fine-Grained Topics. In Sets & Partitions Workshop at NeurIPS, 2019.
2. Anjana G. Rajakumar, K.R. Sheetal Kumar, Justin Payan, and M.S. Mohan Kumar. Artificial Neural Network Based Water Network State Estimation Tool for Bangalore Inflow System. In International Symposium on Lowland Technology, 2016.

M.S. Thesis

1. Justin Payan. *Keyphrase Extraction from Scientific Literature Using Joint Geometric Graph Embedding Matching*. 2018.

Research Experience

Information Extraction and Synthesis Laboratory September 2018 – present
Advised by Andrew McCallum UMass Amherst, Amherst, MA

- Leveraging online hierarchical clustering algorithms for sparse document representations
- Implemented and explored optimal transport and hierarchical attention network based models for citation recommendation and reviewer assignment

Institute for Artificial Intelligence September 2015 – August 2018
Advised by Frederick Maier University of Georgia, Athens, GA

- Designed and implemented a keyphrase extraction algorithm based on an inexact graph matching algorithm

Robert Bosch Centre for Cyber-Physical Systems June 2015 – August 2015
Advised by M.S. Mohan Kumar Indian Institute of Science, Bangalore, India

- Predicted pressure in water distribution networks using artificial neural networks
- Investigated SVM, ANN, and random forest tool for locating leaks in water distribution networks

Cortical Architecture Imaging and Discovery Laboratory August 2014 – May 2015
Advised by Tianming Liu University of Georgia, Athens, GA

- Explored applications of information theory and time series analysis to EEG data
- Presented papers on cross-frequency coupling in neural oscillations to lab members and to collaborators at Augusta University

Industry Experience

Software Engineer at MicroFocus Vertica May 2016 – July 2016, June 2017 – June 2018

- Implemented distributed machine learning algorithms in SQL and C++, including k-means++
- Designed, built, and maintained data preprocessing functions, such as one-hot encoding, normalization, and missing value imputation
- Aided development of an internal memory management API, enabling some of Vertica's algorithms to execute faster than in Apache Spark

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Teaching

Teaching Assistant for CMPSCI 383, Intro to AI September 2018 – December 2018

- Guest lectured on Ethics in Machine Learning, held weekly office hours and exam prep, graded assignments and exams.

Relevant Coursework: Machine Learning, Deep Learning for NLP, Probabilistic Graphical Models
Programming: Python, C++, Java, MATLAB, Prolog
Packages: PyTorch, Numpy, Scikit-Learn