

Education

2018-	Ph.D.	University of Massachusetts Amherst Advisor: Yair Zick
2015-2018	M.S.	University of Georgia Advisor: Frederick Maier
2013-2017	B.S./B.A.	University of Georgia

Research

Conference Publications

1. Cyrus Cousins, Justin Payan, and Yair Zick. Into the Unknown: Assigning Reviewers to Papers with Uncertain Affinities. In Proceedings of the 16th International Symposium on Algorithmic Game Theory (SAGT), 2023.
2. Hadi Hosseini, Justin Payan, Rik Sengupta, Rohit Vaish, and Vignesh Viswanathan. Graphical House Allocation. In Proceedings of the 22nd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), 2023.
3. Justin Payan, Rik Sengupta, and Vignesh Viswanathan. Relaxations of Envy-Freeness over Graphs. In Proceedings of the 22nd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), 2023.
4. Justin Payan and Yair Zick. I Will Have Order! Optimizing Orders for Fair Reviewer Assignment. In Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI), 2022.
5. Ananya Gupta*, Eric Johnson*, Justin Payan, Aditya Roy, Ari Kobren, Swetasudha Panda, Michael Wick, and Jean-Baptiste Tristan. Online Post-Processing In Rankings For Fair Utility Maximization. In Proceedings of the 14th International Conference on Web Search and Data Mining (WSDM), New York, NY, USA, Mar. 2021.
6. Justin Payan, Yuval Merhav, He Xie, Satyapriya Krishna, Anil Ramakrishna, Mukund Sridhar, and Rahul Gupta. Towards Realistic Single-Task Continuous Learning Research for NER. In Findings of the Association for Computational Linguistics: EMNLP 2021, Punta Cana, Dominican Republic, Nov. 2021.

Workshop Publications

1. Justin Payan and Andrew McCallum. Document Representations Using Fine-Grained Topics. In Sets & Partitions Workshop at NeurIPS, 2019.

M.S. Thesis

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

University of Massachusetts Amherst

Advised by Yair Zick

Sept. 2018 – present

Amherst, MA

- Primary areas of interest are resource allocation and peer review
- Currently working on understanding and improving utility functions for reviewer assignment, and online resource allocation for peer review
- Developed first envy-free-up-to-one-item reviewer assignment algorithm, beating competitors in total welfare, speed, and simplicity

Industry Experience

Research Scientist/Engineer Intern at Adobe Research

May 2023 – Aug. 2023

Mentored by Chris Tensmeyer and Vlad Morariu

College Park, MD

- Document structure inference using deep learning and combinatorial optimization

Data Science Intern at Microsoft

June 2022 – Sept. 2022

Managed by Kartik Shridhar

Redmond, WA

- Data augmentation using GPT-3 for an NL to code task
- Worked closely with both production and research teams to implement state-of-the-art modeling and evaluation

Research Intern at Amazon Alexa

June 2021 – Sept. 2021

Managed by Yuval Merhav

Cambridge, MA

- Applied generative insertion transformers (GIT) to data augmentation for NER
- Investigated interaction of GIT augmentation with knowledge-based augmentation approaches

Research Intern at Amazon Alexa

May 2020 – Aug. 2020

Managed by Yuval Merhav

Cambridge, MA

- Explored the efficacy of generative replay for continual learning in a privacy-aware setting
- Created and released dataset for evaluating continual learning for single-task NER

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

Awards & Fellowships

UMass CICS Proposal Writing Grant

Amount: \$12,733.80

Spring 2023

University of Georgia Foundation Fellowship

Currently valued at \$128,260 in tuition and stipend for housing, research, and travel

2013-2017

Presentations

Harvard EconCS Seminar

Into the Unknown: Assigning Reviewers to Papers with Uncertain Affinities

Jan. 2023

Data Analytics and Computational Social Science Brownbag Series

Envy-Freeness in Paper Reviewer Assignment

Apr. 2021

UMass Amherst Theory Seminar

Fair Reviewer Assignment

Apr. 2021

The Fair Division Problem for Indivisible Goods and its Applications, *with John Pomerat*

Nov. 2020

Teaching & Mentoring

Instructor of Record

- CMPSCI 590N, Intro to Numerical Computing with Python Sept. 2020 – Oct. 2020
- CICS 580, Intro to Numerical Computing with Python Sept. 2021 – Oct. 2021

Teaching Assistant

- CMPSCI 383, Intro to AI Sept. 2018 – Dec. 2018
- CMPSCI 121, Intro to Problem Solving with Computers Sept. 2020 – Dec. 2020
- CMPSCI 611, Advanced Algorithms Jan. 2021 – May 2021

Mentoring

- Undergraduate Research Volunteer Program Jan. 2021, Jun. 2021 – Jul. 2021
- Co-mentoring MS student on Searching for Fair Allocations Sept. 2021 – present

Reviewing: Reviewer for ACL 2023; Subreviewer for AAMAS'22 and GAIW at AAMAS'22

Relevant Coursework: Advanced Algorithms, Machine Learning, NLP, Probabilistic Graphical Models

Programming: Python, C++, Java

Packages: PyTorch, Numpy, Gurobi, CVXPY

Research Interests: Fair Allocation, Combinatorial Optimization, Peer Review