

# THOMAS JACOB MARANZATTO

<https://tmaranzatto.github.io/>

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## APPOINTMENTS

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Postdoctoral Fellow, University of Maryland Department of Electrical and Computer Engineering (ECE)	2024-Present
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## EDUCATION

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PhD, University of Illinois Chicago Department of Mathematics, Statistics, and Computer Science (MSCS)	2020 - 2024
BA, New College of Florida Computer Science, Mathematics Minor	2016 - 2020

## JOURNAL PUBLICATIONS

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1. **Thomas Maranzatto** and Marcus Michelen “Age of Gossip From Connective Properties via First Passage Percolation,” in IEEE Transactions on Information Theory, vol. 71, no. 11, pp. 9019-9027, Nov. 2025, doi: 10.1109/TIT.2025.3612162.
2. Shreya Meel, Xiangliang Kong, **Thomas Maranzatto**, Itzhak Tamo, and Sennur Ulukus. “New Capacity Bounds for PIR on Graph and Multigraph-Based Replicated Storage,” Accepted under revision, IEEE Transactions on Information Theory 2025.

## CONFERENCE PUBLICATIONS

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1. Arunabh Srivastava, **Thomas Maranzatto**, Sennur Ulukus. “Information Freshness in Dynamic Gossip Networks,” Accepted ITW 2025. <https://arxiv.org/abs/2504.18504>
2. **Thomas Maranzatto**, Arunabh Srivastava and Sennur Ulukus, “Information Degradation and Misinformation in Gossip Networks,” 2025 IEEE International Symposium on Information Theory (ISIT), Ann Arbor, MI, USA, 2025, pp. 1-6, doi: 10.1109/ISIT63088.2025.11195622.
3. Shreya Meel, Xiangliang Kong, **Thomas Maranzatto**, Itzhak Tamo, and Sennur Ulukus. “Private Information Retrieval on Multigraph-Based Replicated Storage,” 2025 IEEE International Symposium on Information Theory (ISIT), Ann Arbor, MI, USA, 2025, pp. 1-6, doi: 10.1109/ISIT63088.2025.11195342.
4. Arunabh Srivastava, **Thomas Maranzatto**, Sennur Ulukus. “Age of Gossip with Time-Varying Topologies,” 2025 IEEE International Symposium on Information Theory (ISIT), Ann Arbor, MI, USA, 2025, pp. 1-6, doi: 10.1109/ISIT63088.2025.11195490.
5. Arunabh Srivastava, **Thomas Maranzatto**, Sennur Ulukus. “Age of Gossip with the Push-Pull Protocol,” ICASSP 2025 - 2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Hyderabad, India, 2025, pp. 1-5, doi: 10.1109/ICASSP49660.2025.10890446.
6. **Thomas Maranzatto**. “Tree Trace Reconstruction - Reductions to String Trace Reconstruction,” 2024 IEEE International Symposium on Information Theory (ISIT), Athens, Greece, 2024, pp. 885-890, doi: 10.1109/ISIT57864.2024.10619306.
7. **Thomas Maranzatto**. “Age of Gossip in Random and Bipartite Networks,” 2024 IEEE International Symposium on Information Theory (ISIT), Athens, Greece, 2024, pp. 1173-1178, doi: 10.1109/ISIT57864.2024.10619401.

8. Xing Gao, **Thomas Maranzatto**, Lev Reyzin. “A Unified Analysis of Dynamic Interactive Learning,” 2023 59th Annual Allerton Conference on Communication, Control, and Computing (Allerton), Monticello, IL, USA, 2023, pp. 1-8, doi: 10.1109/Allerton58177.2023.10313487.
9. Tania Roy, **Thomas Maranzatto**, Zachary Loomas. “Using machine learning algorithms (supervised) to generate automatically labeled dataset for detecting digital dating abuse from text messages,” FLAIRS, vol. 36, no. 1, May 2023, DOI: <https://doi.org/10.32473/flairs.36.133332>.
10. Tori Kraj, **Thomas Maranzatto**, Reynold Bailey, Cecilia Ovesdotter Alm, Joe Geigel. “Evaluating Audience Engagement of an Immersive Performance on a Virtual Stage,” Frameless: Vol. 2: Iss. 1, Article 4, 2020 Available at: <https://repository.rit.edu/frameless/vol2/iss1/4>

## IN SUBMISSION

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1. **Thomas Maranzatto**, Sennur Ulukus. Deriving Moments in the Age of Gossip Process from Percolation. Submitted ICASSP 2026. <https://arxiv.org/abs/2509.13981>.
2. Itzhak Tamo, **Thomas Maranzatto**, Sennur Ulukus. Approximate Gradient Coding with Partial Computations: Scaling Laws, Serialization Effects, and Design Rules. Submitted MLSys 2026.

## CONFERENCE PRESENTATIONS

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Information Freshness in Dynamic Gossip Networks	ITW 2025
Information Degradation and Misinformation in Gossip Network	ISIT 2025
Reconstructing Arbitrary Trees from Traces in the Tree Edit Distance Model	ISIT 2024
Age of Gossip in Random and Bi-Partite Networks	ISIT 2024
A Unified Analysis of Dynamic Interactive Learning	ALLERTON 2023

## SEMINARS, TALKS, AND LECTURES

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Age of information, graph recursions, and percolation.	Army Research Labs 2025
Age of information is equivalent to first passage percolation	UMD Probability Seminar 2025
Review of Universality of Perceptrons and Transformers	UMD Guest lecture Fall 2024
Percolation and Age of Gossip	Purdue CS Theory Seminar 2024
Combinatorics of the Age of Gossip Invariant	UIC CS Theory Seminar 2024
Age of Gossip in Random and Bipartite Networks	University of Maryland 2024
Kruskal, Prim, and Reverse-Delete Algorithms	Guest Lecture - UIC Algorithms 1 2023
Discrete Fourier Analysis and Intersecting Families	UIC Combinatorics Seminar 2023
Automata, Computation, and Decidability	Guest Lecture - Young Scholars Program 2022
Mathematical Modelling of Disease Spread	Guest Lecture - Young Scholars Program 2022
Combinatorial Reductions in Tree Reconstruction	UIC CS Theory Seminar 2022
String and Tree Reconstruction	UIC Graduate Student Seminar 2021

## AWARDS AND FELLOWSHIPS

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UIC Access To Excellence Fellow	Academic Year 2024-2025
IDEAL Institute Summer Exchange Fellow	Summer 2023
IDEAL Institute Research Fellow	Spring 2023
INMAS Industry Fellow	UIUC/ R-DEX Systems Summer 2023
TRIPODS Research Fellow	Spring 2021
State Honors College Graduate	Spring 2020

## TEACHING EXPERIENCE

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<b>MCS 401</b> Algorithms I (Grader)	UIC Fall 2023/ Spring 2022
<b>Young Scholars Program</b> Instructor	UIC Summer 2022
<b>MATH 110</b> Pre-Calculus (TA)	UIC Spring 2023
<b>MCS 260</b> Introduction to Python (TA)	UIC Fall 2022
<b>MCS 275</b> Programming Tools and File Management (TA)	UIC Fall 2021
<b>MCS 360</b> Introduction to Data Structures (TA)	UIC Fall 2021/ Fall 2022
<b>MCS 401</b> Algorithms I (TA)	UIC Summer 2020
<b>MATH 165</b> Business Calculus (TA)	UIC Fall 2020
Quantitative Resource Center (TA)	NCF Fall 2019 – Spring 2020
Various TA Positions	NCF 2017-2019

## REVIEWING

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IEEE Systems Journal 2025  
IEEE Journal of Selected Topics in Signal Processing 2025  
ISIT 2025  
SODA 2024

## SERVICE

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UIC MSCS Computer Science Seminar	Organizer Fall 2022
UIC MSCS Computer Science Seminar	Organizer Spring 2021
NCF ACM Chapter	Co-Founder and Organizer 2018-2020

## LANGUAGES

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Python, C/C++, Java, SQL, English