Thomas José Lavastida

Assistant Professor of Information Systems

+1 (225) 284 3942
thomas.lavastida@utdallas.edu
tlavastida.github.io
tlavastida

Education

2012–2016 **BSEE – Computer Engineering**, *Louisiana State University*, Baton Rouge, LA.

2016–2017 **Doctoral Student in CS**, *Washington University in St. Louis*, St. Louis, MO.

2017–2019 **MS – Algorithms, Combinatorics, Optimization**, *Carnegie Mellon University*, Pittsburgh, PA.

2017–2022 **PhD – Algorithms, Combinatorics, Optimization**, *Carnegie Mellon University*, Pittsburgh, PA.
Dissertation: *On Scalable Algorithms and Algorithms with Predictions*, Advisor: Prof. Benjamin Moseley

Employment

2022–Present **Assistant Professor of Information Systems**, *University of Texas at Dallas*, Richardson, TX.

Summer 2021 **Research Intern**, *Google Research*, New York, NY, Hosts: Gui Citovsky, Giulia DeSalvo.

Research Interests

- **Algorithm design and analysis**.
- **Algorithms with predictions\learning-augmented algorithms**.
- **Resource allocation and scheduling problems**.
- **Machine learning and clustering**.

Publications

- **Faster Matchings via Learned Duals**.
  in Neural Information Processing Systems (NeurIPS) 2021
  with Michael Dinitz, Sungjin Im, Benjamin Moseley, Sergei Vassilvitskii
  Accepted for an oral presentation (top 1% of submissions)
- **Scaling Average-Linkage via Sparse Cluster Embeddings**.
  in Asian Conference on Machine Learning (ACML) 2021
  with Kefu Lu, Benjamin Moseley, and Yuyan Wang
- **Learnable and Instance-Robust Predictions for Online Matching, Flows, and Load Balancing**.
  in European Symposium on Algorithms (ESA) 2021
  with Benjamin Moseley, R. Ravi, and Chenyang Xu
- **Using Predicted Weights for Ad Delivery**.
  in SIAM Conference on Applied and Computational Discrete Algorithms (ACDA) 2021
  with Benjamin Moseley, R. Ravi, and Chenyang Xu
- **A Scalable Approximation Algorithm for Weighted Longest Common Subsequence**.
  in European Conference on Parallel and Distributed Processing (EURO-PAR) 2021
  with Jeremy Buhler, Kefu Lu, and Benjamin Moseley
- **Online Scheduling via Learned Weights**.
  in ACM-SIAM Symposium on Discrete Algorithms (SODA) 2020
  with Silvio Lattanzi, Benjamin Moseley, and Sergei Vassilvitskii
- **A Framework for Parallelizing Hierarchical Clustering Methods**.
  in European Conference on Machine Learning (ECML-PKDD) 2019
  with Silvio Lattanzi, Kefu Lu, and Benjamin Moseley

Teaching Experience

Spring 2021 **TA - Algorithms for Massive Data Science (PhD)**, *Carnegie Mellon University*, Pittsburgh, PA.
Spring 2021 **TA - End-to-End Business Analytics (MBA)**, *Carnegie Mellon University*, Pittsburgh, PA.
Fall 2020 **TA – End-to-End Business Analytics (Undergrad)**, *Carnegie Mellon University*, Pittsburgh, PA.
Fall 2020 **TA – Advanced Graph Theory (PhD)**, *Carnegie Mellon University*, Pittsburgh, PA.
Summer 2020 **Instructor - Optimization for Business (Undergrad)**, *Carnegie Mellon University*, Pittsburgh, PA.
Fall 2019 **TA – Advanced Graph Theory (PhD)**, *Carnegie Mellon University*, Pittsburgh, PA.
2013-2016 **Math Tutor**, *Louisiana State University Dept. of Mathematics*, Baton Rouge, LA.

Presentations and Posters

- **Robust Machine Learned Predictions for Online Allocation**.
  Presentation at Informs Annual Meeting 2021
- **Learnable and Instance Robust Predictions for Online Matching, Flows, and Load Balancing**.
  Conference talk at European Symposium on Algorithms (ESA) 2021
- **A Scalable Approximation Algorithm for Weighted Longest Common Subsequence**.
  Conference talk at European Conference on Parallel and Distributed Processing (EURO-PAR) 2021
- **Faster Matchings via Learned Duals**.
  Integer Programming and Combinatorial Optimization (IPCO) 2021 Poster Session
  Honorable mention for best poster award
- **Combinatorial Optimization Augmented with Machine Learning**.
  Presentation at Johns Hopkins Theory Seminar Spring 2021
- **Online Scheduling via Learned Weights**.
  Conference talk at Symposium on Discrete Algorithms (SODA) 2020
- **A Framework for Parallelizing Hierarchical Clustering Methods**.
  Conference presentation at European Conference on Machine Learning (ECML-PKDD) 2019
- **Online Load Balancing via Learned Weights**.
  Presentation at Workshop on Models and Algorithms for Planning and Scheduling (MAPSP) 2019

Conference Reviewing

- **Conference on Neural Information Processing Systems (NeurIPS) 2021, 2022**.
- **International Conference on Machine Learning (ICML) 2021, 2022**.
- **International Conference on Learning Representations (ICLR) 2022**.
- **Symposium on Discrete Algorithms (SODA) 2022**.
- **International Conference on Automata, Languages, and Programming (ICALP) 2021**.
- **European Symposium on Algorithms (ESA) 2019, 2022**.
- **Symposium on Parallelism in Algorithms and Architectures (SPAA) 2019**.

Journal Reviewing

- **Journal of Scheduling**.
- **Theoretical Computer Science**.
- **Informs Journal on Data Science**.
- **Operations Research**.