Nicholas Perello

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Education

University of Massachusetts Amherst — Amherst, MA
M.S. / Ph.D. in Computer Science — *September 2018 - Expected December 2025*

Transferred from M.S. to M.S./Ph.D. track in Fall 2020.

Advisors: Przemyslaw Grabowicz & Yair Zick

University of Massachusetts Amherst — Amherst, MA
B.S. in Computer Science; B.S. in Mathematics — *September 2014 - May 2018*

Thesis: *Using Superior Resource Allocation to Reduce Cognitive Overload During Coronary Artery Bypass Surgery*

Research Interests

Responsible AI • Fairness • Explainability • Algorithmic Recourse • Machine Learning • Artificial Intelligence

Publications

*Equal Contribution, †Equal Advising

Archival Publications

- Jenny Hamer*, **Nicholas Perello***, Jake Valladares, Vignesh Viswanathan*, Yair Zick. Simple Steps to Success: A Method for Step-Based Counterfactual Explanations. Accepted to Transactions on Machine Learning Research (TMLR), 2024.
- Przemyslaw A. Grabowicz*, **Nicholas Perello***, Kenta Takatsu. Learning from Discriminatory Training Data. In AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES), 2023
- Przemyslaw A. Grabowicz, **Nicholas Perello**, and Aarshee Mishra. Marrying Fairness and Explainability in Supervised Learning. In ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT), 2022.
- Weihao Tan*, David Koleczek*, Siddhant Pradhan*, **Nicholas Perello**, Vivek Chettiar, Nan Ma, Aaslesha Rajaram, Vishal Rohra, Soundar Srinivasan, H M Sajjad Hossain†, and Yash Chandak†. On Optimizing Interventions in Shared Autonomy. In Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI), 2022. *Also appeared at ICML Workshop on Human-AI Collaboration in Sequential Decision-Making, 2021.*

Non-Archival Publications

- Przemyslaw A. Grabowicz, **Nicholas Perello**, Yair Zick. Towards an AI Accountability Policy. In Comment on FR Doc # 2023-07776 Posted by the National Telecommunications and Information Administration, 2023
- Aarshee Mishra*, **Nicholas Perello***, and Przemyslaw A. Grabowicz. Towards Fair and Explainable Supervised Learning. In ICML Workshop on Socially Responsible Machine Learning (SRML), 2021.
- Przemyslaw A. Grabowicz and **Nicholas Perello**. Resilience of Supervised Learning Algorithms to Discriminatory Poisoning of Training Data. In 7th International Conference on Computational Social Science (IC2S2), 2021.

In review

- **Nicholas Perello**, Cyrus Cousins, Przemyslaw A. Grabowicz, Yair Zick. Discrimination Induced by Algorithmic Recourse Objectives. 2024.

Awards

- GEM Ph.D. Engineering & Science Fellowship recipient starting Fall 2020.
- UMass Amherst 2022-23 Distinguished Teaching Award Finalist – Highest recognition of teaching awarded at UMass Amherst, finalist from the Manning College of Information and Computer Science.
- UMass Amherst 2022-23 Commitment to Diversity Award Winner – Awarded to one student for their outstanding contributions to diversity and inclusion within UMass Amherst.

Research Experience

Socially Intelligent Media & Systems Lab and Fair & Explainable Decision Making Lab — UMass Amherst
Advisors: Przemyslaw Grabowicz & Yair Zick — *January 2020 - In Progress*

- Areas of interest are in fairness, explainability, and their intersection in artificial intelligence.
- Resulted in studies that reveal and prevent discrimination in explainability techniques, utilize explainability techniques to prevent algorithmic discrimination, and focus on fair or explainable machine learning independently.

UMass - Microsoft (MAIDAP) Collaboration — UMass Amherst
Collaboration Lead: H M Sajjad Hossain — *January 2020 - April 2022*

- Collaborated with the Microsoft AI Development Acceleration Program in the development and study of intervention-aware multi-agent reinforcement learning algorithms motivated by how to assist individuals with disabilities in games without ruining their user experience.

UMass Center for Data Science — UMass Amherst
Program Heads: Brant Cheikes & Matthew Rattigan — *June 2019 - August 2019*

- Partnered with Springfield Public Schools to aid in their investigation of the diminishing college success rates of their students using exploratory data analysis and machine learning with students' academic histories.

Laboratory for Advanced Software Engineering Research — UMass Amherst
Advisor: Leon Osterweil — *December 2016 - May 2018*

- Investigated methods to reduce the risk of errors in performing complex medical procedures by assisting medical staff by utilizing in-house models and simulations developed collaboratively with domain experts.

Industry Experience

Salesforce — San Francisco, CA
Software Engineering Intern — *June 2018 - August 2018*

- Full stack developer of a Service Cloud Chatbot feature that streamlined the retrieval of knowledge articles by removing the need for clients to develop code for this task for each of their deployed chatbots.

Intel Corporation — Hillsboro, OR
Software Engineering Intern — *June 2017 - August 2017*

- Given ownership of internal benchmark data analytics tool and extended it to enhance user experience, support more types of data, and present additional visualizations of data.

Service, Mentorship, & Outreach

- **Code2040 Fellow and Senior Fellow** during the summers of 2017 and 2018.

University of Massachusetts Amherst – Manning College of Information & Computer Science

- **Co-founder of B[U]ILT (Black, Indigenous, and Latinx in Tech)** (Co-chair Fall 2018 - Fall 2021).
- **Co-chair of CARE (Committee Against Racism and for Equity) Inclusive Teaching Subcommittee** (Summer 2020 - Fall 2021).
- **Member of Teaching Development Committee** (Fall 2021 - Spring 2022).
- **UGRAD Research Volunteer (URV) Program Ph.D. Mentor** (Winter 2020-21).
- **Energizing Mentoring and Broadening Exposure to Research (EMBER) Program Ph.D. Mentor** (Spring 2021).

Teaching Experience

University of Massachusetts Amehrst — Amherst, MA
*Teaching Assistant, *Instructor* — *August 2020 - In Progress*

- **CS345: Practice and Applications of Data Management** (Fall 2020)
- **CS383: Artificial Intelligence** (Spring 2021, Fall 2021, Spring 2022, Fall 2022)
- **CICS160: Object Oriented Programming** (Spring 2023)
- **FYS191*: First-Year Seminars*** (Fall 2022, Fall 2023)
- **CICS290C*: Computing Success Strategies*** (Fall 2023)
- **CICS110: Foundations of Programming** (Spring 2024)
- **CS515: Algorithms, Game Theory, & Fairness** (Fall 2024)