

# Nicholas Perello

nperello@umass.edu | www.linkedin.com/in/nperello

## EDUCATION

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### University of Massachusetts Amherst

M.S. / Ph.D. in Computer Science

Amherst, MA

September 2018 - In Progress

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

Co-advisors: Przemyslaw Grabowicz & Yair Zick

### University of Massachusetts Amherst

B.S. in Computer Science; B.S. in Mathematics

Amherst, MA

September 2014 - May 2018

Member of Laboratory for Advanced Software Engineering Research (LASER)

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

Advisor: Dr. Leon Osterweil

## REFERRED PUBLICATIONS

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\*Equal contribution, †Equal advising

- 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
- 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, **Nicholas Perello**, and Kenta Takatsu. Resilience of Supervised Learning Algorithms to Discriminatory Data Perturbations. In *preprint*, 2021.
- 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†. Intervention Aware Shared Autonomy. In ICML Workshop on Human-AI Collaboration in Sequential Decision-Making, 2021

## RESEARCH EXPERIENCE

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### University of Massachusetts Amherst

Co-advisors: Przemyslaw Grabowicz & Yair Zick

Amherst, MA

December 2019 - In Progress

- Developed novel supervised learning fairness metrics and objectives utilizing machine learning explainability techniques.
- Investigating the fairness of machine learning explainability techniques.

### UMass - Microsoft (MAIDAP) Collaboration

Collaboration Lead: H M Sajjad Hossain

UMass Amherst

January 2020 - April 2022

- Collaborated with the Microsoft AI Development Acceleration Program in the development and study of human-in-the-loop multi-agent reinforcement learning algorithms to assist individuals with physical disabilities to play games.

### Center for Data Science

Program Heads: Brant Cheikes & Matthew Rattigan

UMass Amherst

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

Advisor: Leon Osterweil

UMass Amherst

December 2016 - May 2018

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

## TEACHING EXPERIENCE

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### University of Massachusetts Amherst

Graduate Teaching Assistant

Amherst, MA

August 2020 - In Progress

- **CS345: Practice and Applications of Data Management** (Fall 2020)
- **CS383: Artificial Intelligence** (Spring 2021, Fall 2021, Spring 2022)

## SERVICE, OUTREACH & ACHIEVEMENTS

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- **Code2040 Fellow and Senior Fellow** during the summers of 2017 and 2018.
- **GEM Ph.D. Science Fellowship recipient** starting Fall 2020.  
(<https://www.gemfellowship.org/students/gem-fellowship-program/>)
- **Co-founder of B[U]ILT(Black, Indigenous, and Latinx in Tech)** at the UMass Amherst College of Information and Computer Science. (<https://cics-built.github.io/>)

### CARE (Committee Against Racism and for Equity)

Core member & Sub-committee Co-chair

UMass Amherst

July 2020 - July 2021

- Initial member of the Committee Against Racism and for Equity in the College of Information and Computer Sciences at UMass Amherst.
- Co-chair of the Inclusive Teaching subcommittee who is working on equity in the classroom with three points of main interest: how students join the program, how students are evaluated, and how to evaluate the effectiveness of faculty.

### UGRAD Research Volunteer Program

Ph.D. Mentor

UMass Amherst

December 2020 - January 2021

- Mentor for undergraduate students as part of the CICS careers UGRAD Research Volunteer Program.
- Introduced research methodology starting with problem formation and ending with a written proposal. Students learned the methodology while working on analyzing racism against Asians on Twitter during Covid-19.

### EMBER (Energizing Mentoring and Broadening Exposure to Research) Research Course

Ph.D. Mentor

UMass Amherst

February 2021 - April 2021

- Mentored undergraduate students of underrepresented identities as part of the EMBER research course.
- Students were introduced to research with a project using machine learning explainability approaches to analyze machine learning fairness models trained and tested on real-world data.

## INDUSTRY EXPERIENCE

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### Salesforce

Software Engineering Intern

San Francisco, CA

June 2018 - August 2018

- Full stack developer of a Service Cloud Chatbot feature to streamline the retrieval of knowledge articles.
- Feature allowed for clients to create knowledge article retrieving chatbots without needing to learn how code in Salesforce's proprietary language.

### Intel Corporation

Software Engineering Intern

Hillsboro, OR

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.
- Consulted with different teams' managers to understand, document, and decide on implementing their requests such that they could replace using slow-performing Excel with the tool.