

JESSICA (JESSIE) FINOCCHIARO

Pronouns: she/her

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[Website](#) ◊ [Google Scholar](#)

EDUCATION

University of Colorado Boulder

Ph.D. student, Department of Computer Science

M.S. Computer Science, May 2020

Advised by Dr. Rafael Frongillo

August 2017 - Present

Overall GPA: 3.874/4.0

Florida Southern College (Honors College)

Bachelor of Science; Computer Science, Mathematics.

Minor in Religion

August 2013 - May 2017

Overall GPA: 4.0/4.0

KEYWORDS

Property elicitation, algorithmic game theory, convex analysis, [convex, consistent, calibrated] surrogate loss functions, algorithmic discrimination.

RESEARCH PUBLICATIONS

Authors are listed alphabetically unless otherwise noted.

Publications supersede workshop presentations of the same name.

Online Platforms and the Fair Exposure Problem Under Homophily

JF, Marc Juarez, Faidra Monachou, Keziah Naggita, Alexander Ritchie, Jakob Schoeffer

Poster accepted to ACM Conference on Equity and Access to Algorithms, Mechanisms, and Optimization (EAAMO) 2021

Unifying Lower Bounds on Prediction Dimension of Consistent Convex Surrogates

JF, Rafael Frongillo, Bo Waggoner

Accepted to Neural Information Processing Systems (NeurIPS) 2021.

26% acceptance rate.

A Decomposition of a Complete Graph with a Hole

Roxanne Back, Alejandra Brewer Castano, Rachel Galindo, **JF**

Accepted to Open Journal of Discrete Mathematics Vol. 11 No. 1. (2021).

Impact Factor: 0.76.

Authors listed by contribution.

Bridging Machine Learning and Mechanism Design towards Algorithmic Fairness

JF, Roland Maio, Faidra Monachou, Gourab Patro, Manish Raghavan, Ana-Andreea Stoica, Stratis Tsirtis

Accepted to ACM Conference on Fairness, Accountability, and Transparency (FAccT) 2021. Supersedes “Fairness and Discrimination in Machine Learning and Mechanism Design.”

25% Acceptance rate.

Evolutionary Optimization of Cooperative Strategies for the Iterated Prisoner’s Dilemma

JF, H. David Mathias

Accepted to IEEE Transactions on Games 2020. Supersedes “Social Trends in the Iterated Prisoner’s

Dilemma.”

Impact Factor: 1.886.

Embedding Dimension of Polyhedral Losses

JF, Rafael Frongillo, Bo Waggoner

Accepted to the Conference on Learning Theory (COLT) 2020.

30.9% Acceptance rate.

An Embedding Framework for Consistent Polyhedral Surrogates

JF, Rafael Frongillo, Bo Waggoner

Accepted to Neural Information Processing Systems (NeurIPS) 2019

21.1% Acceptance rate.

Journal submission in preparation

Convex Elicitation of Continuous Real Properties

JF, Rafael Frongillo

Accepted to Neural Information Processing Systems (NeurIPS) 2018

4% Spotlight acceptance rate.

Social trends in the Iterated Prisoner’s Dilemma

JF, H. David Mathias

Florida Southern College Honors thesis. Accepted to Genetic and Evolutionary Computation Conference (GECCO) 2017.

30% Acceptance Rate.

Egocentric Height Estimation

JF, Aisha Urooj Khan, Ali Borji

Presented at the Winter Conference on Applications in Computer Vision (WACV) 2017.

Impact factor: 3.06; 44% Acceptance Rate.

Authors listed by contribution.

TEACHING EXPERIENCE

Graduate Algorithms (CSCI 5454)

January-May 2019

Teaching Assistant

- No reviews for this position because I did not teach a recitation.

Data Structures (CSCI 2270)

May-August 2018

Teaching Assistant

- Course review averages from recitation taught (12/12 students responding):
 - “Rate the instructor’s availability for course-related assistance such as email, office hours, individual appointments, phone contact, etc.” 5.67/6
 - “Rate this instructor’s respect for and professional treatment of all students regardless of race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation, or political philosophy.” 5.83 / 6
 - “Rate the instructor overall.” 5.58/6

Guest Lectures

- CSCI 3104 (Undergraduate Analysis of Algorithms) April 2021: Introduction to Ethical Algorithms
- CSCI 5454 (Graduate Analysis of Algorithms) March 2019: Introduction to Algorithmic Game Theory

- CSCI 3104 (Undergraduate Analysis of Algorithms) August 2018: Sorting algorithms with assumptions on the list

AWARDS AND FUNDING

- 2020 Rising Stars in EECS at University of California Berkeley
- 2019-2021 National Science Foundation Graduate Research Fellowship (16% grant rate)
- 2018, 2019 Travel Grant for the ACM Economics and Computation Conference's Algorithmic Game Theory Mentoring Workshop
- 2018-19, 2019-20 University of Colorado Boulder Outstanding Student Service Award
- 2017 Student travel grant to attend the Joint Meetings in Mathematics from the Mathematical Association of America
- 2017 Florida Southern College Honor Walk Graduate (Most Outstanding Senior)
- 2017 Florida Southern College Senior Math Student of the Year
- 2016, 2017 Florida Southern College Female Resident Advisor of the Year

INVITED TALKS

- “Fairness and Discrimination Through the Dual Lens of Mechanism Design and Machine Learning” Tutorial at ACM Conference on Economics and Computation (EC) 2021 [Tutorial website](#)
- “An Embeddings Approaching to Constructing Consistent Polyhedral Surrogates” CU Boulder Algorithmic Economics Reading Group, May 10, 2021
- “Indirect Elicitation as a Necessary Condition for Consistency” RIKEN AIP Learning Theory Seminar, December 14, 2020
- “Bridging Machine Learning and Mechanism Design towards Algorithmic Fairness” Princeton Technology for a Just Society (JuST) Speaker Series, October 14, 2020
- “Fairness questions in data aggregation techniques” MD4SG Working Group on Fairness, Bias, and Discrimination, March 3, 2020
- “Handling uncertainty in property elicitation” MD4SG Working Group on Fairness, Bias, and Discrimination, May 8, 2019

WORK EXPERIENCE

- People, Technology & Processes, LLC** August 2015 – May 2016
Software Engineering Intern
- Worked on contracts for the Tampa Bay Buccaneers, NBA, NHL, and New York Yankees in Business Intelligence and predictive analytics for ticket sales and stadium mapping.
 - Worked in C#, R, and Tableau.

LEADERSHIP

- Mechanism Design for Social Good** March 2018-Present
- Community Engagement Co-lead August 2021-Present
 - Co-Organizer for the working group on Discrimination and Equality in Algorithmic Decision-making January-June 2021

- Co-Organizer for the working group on Bias and Fairness February- December 2020

CU Boulder Computer Science Graduate Student Association January 2018-December 2020
Vice-Chair 2018-19, Chair 2020

- Co-founded the organization in January 2018 to advocate for student well-being in the department and facilitate communication between students and faculty.
- Work with department to advocate for student needs and well-being on issues regarding course requirements, advising, and social events.
- Helped organize the PhD Open House recruitment event for ~70 prospective PhD students in February 2019 and 2020.
- Worked with department to establish opportunities for students to share about their culture through both recurring and annual events.

ACADEMIC SERVICE

Mentoring

- Black in AI 2019-20
- CU Boulder United Government of Graduate Students Peer Mentoring 2019-20
- Organized and matched students for [CU Boulder Computer Science Peer Mentoring 2020](#)

Program Committee/Reviewing

- ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO) 2021
- International Conference on Machine Learning (ICML) 2021
- HCRCS Workshop on AI for Social Good 2020
- Mechanism Design for Social Good (MD4SG) Workshop 2020
- Neural Information Processing Systems (NeurIPS) 2020, 2021
- Women in Machine Learning (WiML) 2019

Workshop and Conference Organization

- Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO) 2021 Poster Session co-chair
- Mechanism Design for Social Good (MD4SG) Workshop 2020 Poster Session co-chair

Conference Volunteering

- NeurIPS 2019, 2020
- Economics and Computation (EC) 2019, 2020
- WiML 2019

Neural Network

- Conducted and published [interviews](#) of CU Boulder Computer Science students, faculty, and staff

WORKSHOP PRESENTATIONS

Fairness and Discrimination in Mechanism Design and Machine Learning

JF, Roland Maio, Faidra Monachou, Gourab Patro, Manish Raghavan, Ana-Andreea Stoica, Stratis Tsirtis

Presented at Harvard CRCS Workshop on AI for Social Good (AI4SG) Workshop 2020.

An Embedding Framework for Consistent Polyhedral Surrogates

JF, Rafael Frongillo, Bo Waggoner

Presented at CRA-W 2019 poster session.

Evolutionary Optimization of Cooperative Strategies for the Iterated Prisoner's Dilemma

JF, H. David Mathias

Presented as a poster at Genetic and Evolutionary Computation Conference (GECCO) 2019.

Convex Elicitation of Continuous Real Properties

JF, Rafael Frongillo

Presented at the Workshop on Aggregation, Dynamics, and Elicitation (WADE) at the ACM conference on Economics and Computation (EC) 2018.

Decompositions of a Complete Graph with a Hole

JF, Roxanne Back

Presented at the Student Poster Session at the Joint Meetings in Mathematics 2017.

VOLUNTEERING

Alpha Chi Omega Nu Chapter

August 2020- present

- Worked with Vice President of Intellectual Development to support women in maintaining at least a 2.5 GPA at CU Boulder.

Alpha Chi Omega Leadership Development Team

June 2018- present

- Serving on a team of ten women to provide leadership resources and consultation to collegiate chapters of Alpha Chi Omega.

Cornerstone Church of Boulder

May 2018- June 2021

- Volunteer in the Children's Ministry, primarily working with 2nd – 3rd grade students.

TBA Church Homework Club

August 2015-May 2016

- Tutored students in math and reading ages 6-12.