

Lizzie Kumar

kumari@cs.utah.edu

iekumar.com

I am a second-year PhD student interested in analyzing the social impact of data-driven automated decision systems. My recent work explores the role of explanation and intuition in the data science processes which develop these systems and whether they help or hinder this scrutiny.

EDUCATION

University of Utah Ph.D. Computing, 3.8/4.0	2019— <i>Salt Lake City, UT</i>
University of Massachusetts M.S. Computer Science, 3.8/4.0	2019 <i>Amherst, MA</i>
Scripps College B.A. Mathematics (honors), 10.8/12.0	2016 <i>Claremont, CA</i>

HONORS & AWARDS

Noel de Nevers Memorial Fellowship, ARCS Foundation Utah	2019-2020
Lind Family Prize in Mathematics, Scripps College	2015, 2016
James E. Scripps Scholarship, Scripps College	2012-2016
Finalist, National Merit Scholarship	2012

RESEARCH EXPERIENCE

Graduate Research Assistant <i>University of Utah</i>	2020— <i>Salt Lake City, UT</i>
· Researching methods to understand and explain black-box machine learning decision systems deployed in areas of high social impact, advised by Suresh Venkatasubramanian	

PEER-REVIEWED PAPERS

Epistemic values in feature importance methods: Lessons from feminist epistemology.
Leif Hancox-Li*, **I. Elizabeth Kumar***. To appear in *Proceedings of the 4th ACM Conference on Fairness, Accountability, and Transparency (FAccT)*, 2021.

Shapley Residuals: Quantifying the limits of the Shapley value for explanations.
I. Elizabeth Kumar, Carlos Scheidegger, Suresh Venkatasubramanian, and Sorelle Friedler.
Presented at the *ICML Workshop on Human Interpretability in Machine Learning (WHI)*, 2020.

Problems with Shapley-value-based explanations as feature importance measures.
I. Elizabeth Kumar, Suresh Venkatasubramanian, Carlos Scheidegger, and Sorelle Friedler.
In *Proceedings of the 37th International Conference on Machine Learning (ICML)*, 2020.

*Equal contribution

INDUSTRY EXPERIENCE

Junior Data Scientist

2016-2019

MassMutual

Amherst, MA

- Wrangled/analyzed data and developed machine learning models for the pricing and valuation of disability insurance and pension plans
- Supported codebases for data ingestion and model evaluation using R, Python, and SQL
- Implemented explanation systems for transparency into black-box underwriting models
- Fully funded for graduate coursework at UMass through the Data Science Development Program

TEACHING EXPERIENCE

Graduate Teaching Assistant

2020—

University of Utah

Salt Lake City, UT

- Held office hours, prepared course materials, and gave occasional lectures for undergraduate-level Algorithms
- Lead discussions for undergraduate-level Ethics in Data Science

Undergraduate Teaching Assistant

2013-2016

Scripps College

Claremont, CA

- Mentored Scripps students in any math class twice a week at the walk-in tutoring center
- Graded for Precalculus, Calculus I, Differential Equations, and Number Theory
- Privately tutored Real Analysis

Drawing Instructor

Summer 2014

Deerfield Academy

Deerfield, MA

- Planned and led classes in drawing and other art activities for adolescent campers

INVITED SPEAKING

- Epistemic values in feature importance methods
Trustworthy ML Rising Star Seminar Series, January 2021
- Panelist, *ICML Workshop on Human Interpretability in Machine Learning, July 2020*
- Problems with Shapley-value-based explanations as feature importance measures
CapitalOne Responsible AI Journal Club, June 2020
- Why doing ethical data science makes better science
UMass Data Science Industry Mentorship Course, April 2019

TECHNICAL STRENGTHS

Programming Languages

R, Python, SQL

Imaging / Typesetting

LaTeX, Photoshop, Illustrator

SERVICE & OUTREACH

Reviewer, Workshop on Human Interpretability in Machine Learning

2020

Data Visualization Mentor, Five College Datafest

2018, 2019

Beta reader, O'Reilly Machine Learning with Python Cookbook

2017