Lizzie Kumar

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iekumar.com

EDUCATION

Brown University — expected 2023
Ph.D. Computer Science — *Providence, RI*
Advised by Suresh Venkatasubramanian

University of Massachusetts — 2019
M.S. Computer Science, 3.8/4.0 — *Amherst, MA*

Scripps College — 2016
B.A. Mathematics (honors), 10.8/12.0 — *Claremont, CA*

HONORS & AWARDS

Best Paper Award, ACM FAccT — 2021
Noel de Nevers Memorial Fellowship, ARCS Foundation Utah — 2019-2020
Grad Cohort Workshop for Women Travel Grant, CRA-WP — 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

Machine Learning Research Fellow — Summer 2021
Arthur AI — *Remote*

· Researching the utility of machine learning fairness detection and mitigation methods for compliance and regulation in finance

Graduate Research Assistant — 2019-2021
University of Utah — *Salt Lake City, UT*

· Researched the effectiveness of methods to understand and explain machine learning models from both a technical and social science perspective
· Advised by Suresh Venkatasubramanian

PEER-REVIEWED PAPERS

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

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 2020-2021
University of Utah *Salt Lake City, UT*

- Held office hours, prepared course materials, and gave occasional lectures for undergraduate-level Algorithms
- Led 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 January 2021
  Trustworthy ML Rising Star Seminar Series
- Panelist, *ICML Workshop on Human Interpretability in Machine Learning* July 2020
- Problems with Shapley-value-based explanations as feature importance measures June 2020
  CapitalOne Responsible AI Journal Club
- Why doing ethical data science makes better science April 2019
  UMass Data Science Industry Mentorship Course,

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