Rishi Advani

radvani2@uic.edu • rishi-advani.com • (626) 667-4744

EDUCATION

University of Illinois Chicago 2021 – present
PhD Candidate in Computer Science (GPA: 4.0)
University Fellow
Advisor: Abolfazl Asudeh

Cornell University 2017 – 2021
Bachelor of Arts in Computer Science (*cum laude*) and Mathematics

RESEARCH EXPERIENCE

InDeX Lab, University of Illinois Chicago Aug '21 – present
Research Assistant
Design novel approaches for combating misinformation and for low-resource machine learning in Professor Abolfazl Asudeh's lab.

Civic Participation Working Group, MD4SG Feb '21 – present
Member
Give presentations on and discuss topics related to the role of computer science in democracy, from theoretical and practical viewpoints.

Department of Information Science, Cornell University Sep '20 – Jun '21
Research Assistant
Used topic modeling and NLP techniques to analyze the syllabi of hundreds of university data ethics courses to understand the patterns in curricula across different institutions, as part of Professors Karen Levy and Solon Barocas' research group.

ICERM, Brown University Jun '20 – Jul '20
Undergraduate Research Fellow
Studied the use of random projection in dimension reduction to solve problems in numerical linear algebra and data science. Advised by Professor Akil Narayan. Results available at rishi-advani.com/random-projections.

Department of Computer Science, Cornell University Jan '20 – May '20
Research Assistant
Used generative adversarial networks to perform image generation under Professor Bharath Hariharan.

Department of Computer Science, Cornell University — Sep '19 – Dec '19
Research Assistant
Studied high-dimensional expander graphs and pseudorandomness under Professor Eshan Chattopadhyay.

PAPERS

Rishi Advani and Abolfazl Asudeh. Online Maximum Independent Set of Hyperrectangles. *Under review*.

Sana Ebrahimi, **Rishi Advani**, and Abolfazl Asudeh. Sampling-Based Techniques for Training Deep Neural Networks with Limited Computational Resources: A Scalability Evaluation. *Under review*.

Joel Miller, **Rishi Advani**, Chris Kanich, Ian Kash, and Lenore Zuck. Fair Division via Mutual Aid Networks. *Under review*.

Rishi Advani, Paolo Papotti, and Abolfazl Asudeh. Maximizing Neutrality in News Ordering. *KDD '23*. doi.org/10.1145/3580305.3599425

Rishi Advani and Sean O'Hagan. More Efficient Algorithms for Constructing an Interpolative Decomposition. *arXiv:2105.07076*. May 2021.

Rishi Advani, Madison Crim, and Sean O'Hagan. Random Projections and Dimension Reduction. *arXiv:2008.04552*. Aug. 2020.

Rishi Advani. On the Prevalence of Bridge Graphs among Non-3-Connected Cubic Non-Hamiltonian Graphs. *arXiv:1908.10528*. Aug. 2019.

PRESENTATIONS

Maximizing Neutrality in News Ordering, KDD '23, Long Beach, CA — Aug '23
Oral and poster presentations. Promo video available at youtu.be/8kKdqbg1Byg.

An Improved Interpolative Decomposition, SUMS, James Madison University — Dec '20
Presented results from research at ICERM and further work. Recording available at youtu.be/C1D3yBpKJ6Y.

Random Projections, ICERM, Brown University — Jul '20
Presented research from Summer@ICERM program. Slides available at rishi-advani.com/random-projections/slides.pdf.

WORK EXPERIENCE

Software Engineering Intern, The Learning Corp, Newton, MA — Jun '18 – Aug '18
Project manager for a team of 5 new interns. Guided them through the software development process using Agile methodology. Designed back-end services in Java and SQL, and front-end features in Python.

Intern, Constant Therapy, Newton, MA — Jun '14 – Aug '16
Designed new features in a stroke therapy app using Java. Analyzed trends in over 30,000 user responses using SQL to verify content accuracy. Performed extensive testing of the product. Assisted patients with rehabilitation exercises.

HONORS

Student Travel Award, KDD '23

University Fellowship, University of Illinois Chicago
Awarded to students who are considered most promising and most likely to make outstanding contributions to the university and their fields of learning.

SERVICE

Student Volunteer, KDD '23

Ethics Reviewer, NeurIPS '23

Student Volunteer, FAccT '23

External Reviewer, ICDE '23

Lead Maintainer, Cornell CS Wiki — Apr '19 – May '21
Maintained an open-source wiki for students interested in computer science at Cornell University. Added content, moderated submissions, maintained continuous integration with GitHub source, and recruited new members. Hosted at cornellcswiki.gitlab.io.

Co-Founder and Co-Director, PDMT — Jun '16 – May '17
Managed finances and negotiated sponsorships for a math competition with over 100 participants. Led a team of over 40 people working in publicity, problem-writing, and web development.

PROJECTS

hw-latex-template — Fall '20 – present
Maintain an open-source LaTeX template for typesetting homework solutions. Available at github.com/rishi1999/hw-latex-template.

Pixel Shuffle Spring '21

Designed a novel image morphing app. Overview at rishi-advani.com/pixel-shuffle.

Tweet Classifier Fall '19

Trained a model to determine whether a Tweet by a certain high-profile Twitter user was written by the user themselves or by a member of their PR team. Our model ranked 6th place out of over 100 teams in our Machine Learning for Intelligent Systems course.

Story Cloze Test Fall '19

Fine-tuned a BERT model to predict the endings of stories from the ROCStories dataset.

OCaml Poker Spring '19

Designed a poker engine using OCaml with an intelligent AI opponent.

TECHNICAL SKILLS

Python • PyTorch • NumPy • Java • OCaml • JavaScript • C • SQL • LaTeX • Git • Linux

LANGUAGES

English (native) • Hindi (proficient) • Spanish (proficient)