

# Rishi Advani

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## EDUCATION

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<b>University of Illinois Chicago</b> PhD Candidate in Computer Science (GPA: 4.0) <i>University Fellow</i> Advisor: Abolfazl Asudeh	2021 – present
<b>Cornell University</b> Bachelor of Arts in Computer Science ( <i>cum laude</i> ) and Mathematics	2017 – 2021

## RESEARCH EXPERIENCE

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<b>InDeX Lab</b> , University of Illinois Chicago <i>Research Assistant</i> Design novel algorithmic approaches for combating misinformation in Professor Abolfazl Asudeh's lab.	Aug '21 – present
<b>Civic Participation Working Group</b> , MD4SG <i>Member</i> Give presentations on and discuss topics related to the role of computer science in democracy, from theoretical and practical viewpoints.	Feb '21 – present
<b>Department of Information Science</b> , Cornell University <i>Research Assistant</i> 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.	Sep '20 – Jun '21
<b>ICERM</b> , Brown University <i>Undergraduate Research Fellow</i> 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 <a href="http://rishi-advani.com/random-projections">rishi-advani.com/random-projections</a> .	Jun '20 – Jul '20
<b>Department of Computer Science</b> , Cornell University <i>Research Assistant</i> Used generative adversarial networks to perform image generation under Professor Bharath Hariharan.	Jan '20 – May '20

Studied high-dimensional expander graphs and pseudorandomness under Professor Eshan Chattopadhyay.

## PAPERS

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**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](https://doi.org/10.1145/3580305.3599425)

**Rishi Advani** and Sean O'Hagan. More Efficient Algorithms for Constructing an Interpolative Decomposition. [arXiv:2105.07076](https://arxiv.org/abs/2105.07076). May 2021.

**Rishi Advani**, Madison Crim, and Sean O'Hagan. Random Projections and Dimension Reduction. [arXiv:2008.04552](https://arxiv.org/abs/2008.04552). Aug. 2020.

**Rishi Advani**. On the Prevalence of Bridge Graphs among Non-3-Connected Cubic Non-Hamiltonian Graphs. [arXiv:1908.10528](https://arxiv.org/abs/1908.10528). Aug. 2019.

## PRESENTATIONS

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**Maximizing Neutrality in News Ordering**, KDD '23, Long Beach, CA Aug '23  
Oral and poster presentations. Promo video available at [youtu.be/8kKdqbg1Byg](https://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](https://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](https://rishi-advani.com/random-projections/slides.pdf).

## WORK EXPERIENCE

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- Teaching Assistant**, University of Illinois Chicago, Chicago, IL Aug '23 – Dec '23  
Graduate TA for CS 401: Computer Algorithms I. Hosted office hours, graded assignments and exams, and managed a discussion forum for students.
- 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

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- Travel Award**, UIC Graduate Student Council
- Student Presenter Award**, UIC Graduate College
- 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

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- PC Member**, CIKM '24
- 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](https://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

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**hw-latex-template**

Fall '20 – present

Maintain an open-source LaTeX template for typesetting homework solutions. Available at [github.com/rishi1999/hw-latex-template](https://github.com/rishi1999/hw-latex-template).

**pixel-shuffle**

Spring '21

Designed a novel image morphing app using Python. Overview at [rishi-advani.com/pixel-shuffle](https://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

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Python • NumPy • SciPy • PyTorch • scikit-learn • pandas • SQL • LaTeX • Git • Linux

LANGUAGES

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