KUNAL RELIA

Independent Scientist

[updated: Oct 28, 2026]
Rajkot, India
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EDUCATION

2022 **Ph.D., Computer Science**,
NYU Tandon School of Engineering, Brooklyn - USA.
Advisor: Julia Stoyanovich, Ph.D.

2016 **M.S., Computer Science**,
NYU Tandon School of Engineering, Brooklyn - USA.

2014 **B.E., Computer Engineering**,
Gujarat Technological University, Rajkot - India.

RESEARCH INTERESTS

Theoretical Computer Science, Algorithmic Fairness, Computational Social Choice, Responsible Data Science.

PROFESSIONAL EXPERIENCE

Research

Jun 2022 - Present **Independent Scientist**.
Working on the evolution of DiRe Research Universe. Specifically, discovering an unconditional deterministic polynomial-time algorithm for the vertex cover problem on (unweighted simple) cubic bridgeless graphs, which is NP-complete. Project page: https://kunalrelia.github.io/DRU/

Jun 2016 - May 2022 **Research Assistant**, *NYU Tandon School of Engineering, Brooklyn - USA.*
Progressed towards formalizing the contradistinction between diversity and representation.

Non-research

Sep 2015 - May 2016 **Team Lead/Analyst**, *NYU Office of Graduate Admissions, Brooklyn - USA.*
Led a team of 21 graduate assistants; cut application processing time by 15% and augmented a transcript evaluation algorithm

Sep 2015 - Dec 2015 **Teaching Assistant**, *NYU Tandon School of Engineering, Brooklyn - USA.*
Assisted Prof. Viji Srinivasan (Computer Architecture 1)

Jun 2010 - Jan 2015 **Co-founder**, *ReLife Pharma, Rajkot - India.*
Co-founded a health care start-up manufacturing and marketing medicines in India

Jul 2013 - Jun 2014 **Software Developer Intern**, *Johnson & Johnson Ltd., Rajkot - India.*
Conceptualized and developed a claim management software capable of managing annual claims worth $4.5M of company's 1000+ dealers. The prototype is still in use more than ten years later while withstanding a major taxation overhaul and multiple policy changes by the company.

AWARDS

School of Engineering Fellowship - NYU Tandon, *2017, 2019.*

Graduate Scholarship - NYU Tandon, *2015.*

Academic Excellence Award - GTU, *2014.*

PUBLICATIONS

[C] : conference; [J] : journal.

* : authors listed alphabetically.

[C6] **Kunal Relia**. "*DiRe Committee: Diversity and Representation Constraints in Multiwinner Elections*". Proceedings of the 31st International Joint Conference on Artificial Intelligence, 2022 (IJCAI-22). long oral

Shorter version presented at the 8th International Workshop on Computational Social Choice (COMSOC) Poster Session, 2021.

[J1*] Vishal Chakraborty, Theo Delemazure, Benny Kimelfeld, Phokion Kolaitis, **Kunal Relia**, and Julia Stoyanovich. "*Algorithmic Techniques for Necessary and Possible Winners.*" In ACM/IMS Transactions on Data Science (2021).

[C5] **Kunal Relia**, Zhengyi Li, Stephanie H Cook, and Rumi Chunara. *"Race, Ethnicity and National Origin-based Discrimination in Social Media and Hate Crimes Across 100 U.S. Cities."* Proceedings of the Thirteenth AAAI International Conference on Web and Social Media (ICWSM-2019).
Media: Business Insider, The Register, VICE

[C4] Nabeel Abdur Rehman, **Kunal Relia**, and Rumi Chunara. "*Creating Full Individual-level Location Timelines from Sparse Social Media Data.*" ACM SIGSPATIAL GIS'18.

[C3] **Kunal Relia**, Mohammad Akbari, Dustin Duncan, and Rumi Chunara. "*Socio-spatial Self-organizing Maps: Using Social Media to Assess Relevant Geographies for Exposure to Social Processes.*" Proceedings of the ACM on human-computer interaction 2, no. CSCW (2018).

[C2] Mohammad Akbari, **Kunal Relia**, Anas Elghafari, and Rumi Chunara. "*From the User to the Medium: Neural Profiling Across Web Communities.*" Proceedings of the Twelfth AAAI International Conference on Web and Social Media (ICWSM-2018). *(poster)*

[C1] Tom Huang, Anas Elghafari, **Kunal Relia**, and Rumi Chunara. "*High-resolution temporal representations of alcohol and tobacco behaviors from social media data.*" Proceedings of the ACM on human-computer interaction 1, no. CSCW (2017).

WORKING PAPERS

[W4] **Kunal Relia**. "*On the Computational Complexity of the Vertex Cover Problem on Cubic Bridgeless Graphs*", 2026.

[W3] **Kunal Relia**. "*On Efficient Computation of DiRe Committees*", 2024.

[W2] **Kunal Relia**. "*On the Complexity of Finding a Diverse and Representative Committee using a Monotone, Separable Positional Multiwinner Voting Rule*", 2022.

[W1] **Kunal Relia**. "*Fairly Allocating Utility in Constrained Multiwinner Elections*", 2022.

MENTORING

2021 **Lauren Kirshenbaum**, *NYU BS Student*.

Eunice Son and Afifa Tanisa, *NYU ARISE* †.
Afifa joined Columbia.

2020 **Raisa Bhuiyan and Rachel Rose**, *NYU ARISE*.

2019 **Kennan Gumbs and Heeyun Kim**, *NYU ARISE*.
Kennan joined MIT.

2018 **Zhengyi Li**, *NYU BS student*.
Subsequently team lead at Opine.

† : NYU ARISE (Applied Research Innovations in Science and Engineering) is a summer STEM research opportunity for 10th and 11th graders.

TALKS

2021 **COMSOC Seminar Series**, *Online International Seminar*.

2017 **Natural Language Processing (NLP) Community Reception**, *NYU Center for Data Science, New York - USA*.

COMMUNITY SERVICE

Academic

Program Committee: AAAI (2021‡, 2022, 2023), AAAI ICWSM (2020, 2021), AAAI/ACM AIES (2022).

Reviewing: AAAI (2021, 2022, 2023), AAAI ICWSM (2020, 2021, 2022, 2023, 2024, 2025), AAAI/ACM AIES (2022), ACM CHI (2020, 2021, 2022, 2023, 2025‡), ACM CSCW (2019, 2020, 2021, 2022, 2023), NeurIPS Ethics (2024, 2025, 2026), ICML AI4GOOD (2026).

External Reviewing: ACM WebSci (2020).

Selection Committee: NYU ARISE (2020, 2021, 2022, 2023, 2024, 2025, 2026).

Organizing Committee: NYU CSE Research Expo (2021).

Representative: NYU CSE Ph.D. Students.

‡ : Special Recognition.