

KISHORE VASAN

Boston, United States

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OBJECTIVE STATEMENT

I am a computational social scientist, specializing in employing data-driven methodologies to uncover the complexities of human behavior. With expertise in machine learning, causal inference, and network science, I bring a valuable skill set to interdisciplinary projects. My interests extend across diverse domains, including health sciences, social inequality, blockchain, and the metaverse. More recently, I am interested in the use of AI for social impact applications.

EDUCATION

Northeastern University

PhD in Network Science

Research direction: network methods and social impact

Advisor: Albert-Laszlo Barabasi

September 2020 - Present

Boston, Massachusetts

University of Washington

Bachelor of Science

Major: Informatics - Data Science; Minor: Quantitative Science

Advisor: Jevin West

September 2016 - June 2020

Seattle, Washington

TECHNICAL STRENGTHS

Computer Languages

Python, R, MySQL, d3.JS, Three.JS, Java, React, HTML

Software & Tools

RStudio, Gephi, Cytoscape, networkx, matplotlib, pandas, pytorch

EXPERIENCE

Meta Inc.

May 2024 - Sep 2024

Research Scientist Intern, Computational Social Science

- Meta-analysis of experiments on Meta platforms with a focus on social network in cross app settings.

Center for Complex Networks Research, Network Science Institute

Sept 2020 - Present

Graduate Research Associate

Causal effects of gender segregation in chess

June 2023 - Present

- A chess player's success is influenced not only by their skill level but also by the interactions with their fellow players who participate in similar tournaments.
- I use causal inference techniques on large observational data from chess tournaments. The project features a special focus on the benefits and drawbacks of gender segregation.

Human mobility in the metaverse

May 2022 - April 2024

- In contrast to mobility in the physical world, mobility in the metaverse lacks manifested geographical boundaries, calling for fresh perspectives to understand human behavior.
- I investigate how individuals build their visitation space, and how the presence of a shared virtual environment impacts macroscopic movements and mobility networks.

Social processes underlying drug innovation in clinical trials

Sept 2020 - Sep 2022

- Drug exploration is rarely an isolated biological process. Social effects such as repeatedly testing known drug targets, affects collective drug exploration.
- The goal of the project is to identify the fundamental mechanisms that govern drug exploration and develop optimal strategies of unbiased drug exploration.

Networks and success in Crypto Art

April 2021 - December 2021

- NFTs took the world by storm after Beeple sold his famous artwork for over \$69 Million. But are all artists equally successful? What is the role of collectors, and fan base in ensuring artist success?
- We identify the important variables that determine success of new artists, demonstrate the presence of taste in the collecting behavior of collectors, and measure the network effects in crypto art.

DataLab, Information School

September 2017 - August 2020

Undergraduate Research Associate

Network structure of co-funding in clinical science

July 2019 - August 2020

- Assessing the scientific impact of different funding strategies in clinical trials. The goal is to untangle the relationship between funding agencies through a co-funding network.
- Funded by the Bill & Melinda Gates Foundation and Mary Gates Research Scholarship.

Measuring scientific buzz using keywords

July 2018 - June 2019

- Comparing the applicability of keywords and abstracts in describing research trends. I discovered that keywords are a powerful resource for identifying hot topics than abstracts.
- Funded through Mary Gates Research Scholarship.

Mapping cross-departmental collaboration at UW

September 2017 - August 2018

- How impactful are multi-departmental collaboration at a large scale public university? We discovered an effect of compartmentalization where departments that collaborate together, also cite each other.
- I worked on disambiguation of departmental and institutional affiliations of authors over 60k papers

Information School, University of Washington

Spring 2018 - Spring 2019

Teaching Assistant, INFO 201 - Data Visualization using R.

- As a TA for over 100 students, I conducted weekly lab sessions, answered online questions, and graded weekly assignments. The course covers source control and interactive data visualization principles.

Genpact Inc.

June 2017 - August 2017

Data Science Intern

- Enhancing customer care analytics by automatic emotion recognition system by extracting voice features and unsupervised topic clustering of GM Financial chat transcripts using latent semantic analysis.
- Worked in a team of 4 people and presented a proof of concept to the upper management.

PUBLICATIONS

Journal Publications

The role of gender-based segregation in generating elite performance

TBA

Kishore Vasan, Louis Shekhtman, Judit Polgar, Larry Han, and Albert-Laszlo Barabasi.

In Prep

Human mobility in the metaverse

TBA

Kishore Vasani, Marton Karsai, and Albert-Laszlo Barabasi.

Under review: Nature Human Behavior

The Clinical Trials Puzzle: How network effects limit drug discovery

Nov 2023

Kishore Vasani, Deisy Gysi, and Albert-Laszlo Barabasi.

Cell iScience

Quantifying NFT-driven networks in crypto art

Feb 2022

Kishore Vasani, Milan Janosov, and Albert-Laszlo Barabasi.

Scientific Reports

The hidden influence of communities in collaborative funding of clinical science

Aug 2021

Kishore Vasani and Jevin West.

Royal Society Open Science

Conference Papers

SciSight: Combining faceted navigation and research group detection for COVID-19 exploratory scientific search

May 2020

Tom Hope, Jason Portenoy, Kishore Vasani*, Jonathan Borchardt*, Eric Horvitz, Daniel Weld, Marti Hearst, and Jevin West.*

Empirical Methods in Natural Language Processing (EMNLP) 2020 systems track. Online.

* - denotes equal contribution

Is together better? Examining scientific collaboration across multiple authors, departments and institutions.

August 2018

Lovenoor Aulck, Kishore Vasani and Jevin West.

Knowledge Discovery and Data mining(KDD): BigScholar workshop 2018. London, UK.

Measuring scientific buzz.

March 2019

Kishore Vasani and Jevin West.

Information Schools Conference (iConference) 2019 as a poster. Washington, DC.

MEDIA COVERAGE

Artnet News. Want to Succeed as an NFT Artist? Here Are 5 Things to Know, According to a New Study of One of the Biggest Crypto-Art Platforms. March 2022

Nature News. Artificial-intelligence tools aim to tame the coronavirus literature. June 2020

Science. Scientists are drowning in COVID-19 papers. Can new tools keep them afloat? May 2020

PRESENTATIONS

Saint Louis Chess Conference Saint Louis Chess Club.

Sept 2024

Cutting Edge Connections: Healthcare Innovation Northeastern University.

Nov 2023

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| Invited talk on mobility in the metaverse MIT Media Lab. | May 2023 |
| Invited talk on artist communities NFT NYC | April 2023 |
| Whats the story with NFTs? Cambridge Arts Association panel. | May 2022 |
| Research Exposed! Population Health Initiative (PHI) panel | March 2020 |
| Undergraduate Research Symposium Presented work on collaborative funding | May 2020 |

SERVICE AND ACHIEVEMENTS

Mary Gates Research Scholarship 2018 - 2019

- A highly selective award given to undergraduates at the University of Washington pursuing research.
- I received this award to develop techniques to map research trends and study funding mechanisms.

Moholy-Nagy University of Art and Design (MOME) Spring 2021

- A part-time contract to advice on emerging trends in the art world using a data driven approach

Undergraduate Admission Committee Spring 2019

- Helped review undergraduate applicants for Informatics, a competitive major.
- Comprehensively reviewed the applicant based on personal statement, intent to major, and grades.

Society of Network Scientists, UW Fall 2019 - Summer 2020
Co-Founder, Vice President

- A campus wide initiative with an aim to promote and encourage research in network science. The organization acts as a platform for fellow researchers to interact and collaborate.
- We host weekly reading groups on social networks, panel discussions, and invite distinguished speakers.
- The group also serves an eScience Special Interest Group (SIG) on networks, and a local chapter of *The Society of Young Network Scientists* (SYNS).

Reviewer

- Book on cryptocurrency, Oxford University Press
- Journal article, Electronic Markets
- Journal article, BMC Bioinformatics
- Journal article, Qeios

SELECTED CLASSROOM PROJECTS

In search of food September - December 2020
The breakdown and robustness of food flow in the United States Complex Networks and applications

- Food flow patterns are an essential component of society and serves as a complex system of distribution between producers, consumers, and distributors. Yet, we know little about the impact of food epidemics.
- I find that every county is highly dependent on counties for specific food commodity, indicating a complex web of connections driven by food commodity.
- Finally, I find that the network is fairly robust towards targeted removal of distribution channels primarily due to the local dependence for food supplies.

Crawling Wikipedia Graph April 2019 - June 2019
Exploring the edit dynamics of users in Wikipedia Statistical Analysis of Social Networks

- Mining large graphs reveals information; temporal network of the same reveal evolution. However, performing novel algorithms on these large graphs can be computationally expensive. We need methods that can provide an un-biased sample that would be representative of the underlying large network.
- In this work, we evaluated different random walks by crawling a large online editing network, Wikipedia.
- Our *findings* include - simple random walk is ineffective when sampling graphs with high tailed distribution, and re-weighted random walk outperforms other methods for graph sampling.

COURSEWORK

Northeastern University

PHYS 5116 - Complex networks and application I

NETS 6116 - Complex networks and application II

PHYS 7332 - Graph machine learning

POLS 7334 - Social network analysis

NETS 7341 - Network economics

PHYS 7335 - Dynamical processes in complex networks

BIOT 5120 - Foundations in Biotechnology

BIOL 5595 - Cellular and Molecular Neuroscience

PHTH 6800 - Causal Inference in Public Health

University of Washington

QSCI 403 - Introduction to resampling inference

QSCI 482 - Statistical inference in applied research I

QSCI 497 - Complex analysis using agent based models

STAT 567 - Statistical analysis of social networks

MATH 324 - Advanced multi-variable calculus I

INFO 371 - Advanced methods in data science

INFO 430 - Advanced database design and management

CSE 373 - Data structures and algorithms

CSE 415 - Introduction to artificial intelligence

REFERENCES

Primary

Albert-Laszlo Barabasi - Northeastern University

Jevin West - University of Washington

Secondary

Larry Han - Northeastern University

Daniel Thomas - Meta Inc.

Alex "Sandy" Pentland - MIT