

# KISHORE VASAN

Boston, United States

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## OBJECTIVE STATEMENT

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A highly motivated and spirited learner who is excited about what life offers. My research builds and utilizes tools from network science, machine learning, and data visualization to build social theories, backed by empirical data, in various domains from clinical trials to the web3 ecosystem.

## EDUCATION

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### Northeastern University

PhD in Network Science

Research direction: human behavior in the metaverse

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

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### Computer Languages

Python, R, Solidity, MySQL, d3.js, Three.js, Java, React, HTML

### Software & Tools

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

## EXPERIENCE

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### MIT Connection Science, MIT Media Lab

*Research Visitor*

May 2023 - Present

### Center for Complex Networks Research, Network Science Institute

*Graduate Research Associate*

Sept 2020 - Present

### Social and economic connectedness in the metaverse

May 2022 - Present

- Real-world exploration is heavily constrained by commute times, affecting social circles, potentially created income fragmentation and social exclusion. Yet, the metaverse removes such constraints, raising the question, does the metaverse help alleviate the socio-economic biases in real-world systems.
- Through this project I seek to understand the patterns of individual and collective exploration in the metaverse and measure socio-economic mobility of users within it.

### Social processes underlying drug innovation in clinical trials

Sept 2020 - Present

- 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.

### Discerning artist success in NFTs and 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.

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**DataLab, Information School**  
*Undergraduate Research Associate*

September 2017 - August 2020

**Collective dynamics in co-funding of clinical trials**

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

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**Information School, University of Washington**  
*Teaching Assistant, INFO 201 - Data Visualization using R.*

Spring 2018 - Spring 2019

- 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.

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**Genpact Inc.**  
*Data Science Intern*

June 2017 - August 2017

- 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

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### Journal Publications

**Human nature of meta-mobility in the metaverse**  
*Kishore Vasani, Marton Karsai, and Albert-Laszlo Barabasi.*

TBA

In Prep, Target journal: Nature Human Behavior

**Network effects in drug-target exploration in clinical trials**  
*Kishore Vasani, Deisy Gysi, and Albert-Laszlo Barabasi.*

TBA

In Prep, Target journal: Cell iScience

**Quantifying NFT-driven networks in crypto art**  
*Kishore Vasani, Milan Janosov, and Albert-Laszlo Barabasi.*

Feb 2022

**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

**Invited talk on mobility in the metaverse** MIT Media Lab. May 2022

**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 advise 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

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### 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

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### 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

**University of Washington**

**QSCI 403** - Introduction to resampling inference

**QSCI 482** - Statistical inference in applied research I

**QSCI 483** - Statistical inference in applied research II

**QSCI 497** - Complex analysis using agent based models

**STAT 567** - Statistical analysis of social networks

**MATH 308** - Matrix algebra with applications

**MATH 309** - Linear analysis

**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