KISHORE VASAN

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OBJECTIVE STATEMENT

I am a computational social scientist, investigating the impact of new technologies like blockchain, the metaverse, and AI on human behavior, and developing ways to promote social connections, foster innovation, and reduce inequality. With expertise in machine learning, causal inference, and network science, I bring a valuable skill set to cross-disciplinary projects. My work emphasizes a commitment to translating data insights into actionable impact.

EDUCATION

Northeastern University *September 2020 - Present*
PhD in Network Science Boston, Massachusetts
Research direction: network methods and social impact
Advisor: Albert-Laszlo Barabasi

University of Washington *September 2016 - June 2020*
Bachelor of Science Seattle, Washington
Mary Gates Research Scholar, 2018
Major: Informatics - Data Science; Minor: Quantitative Science
Advisor: Jevin West

TECHNICAL STRENGTHS

Computer Languages	Python, R, mySQL, d3.JS, Three.JS, Java, React, HTML
Software & Tools	RStudio, Gephi, Google Cloud, BigQuery, 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 also offers mechanistic insights using move level evaluations gathered from Stockfish.

· Key skills: Incremental Propensity Score, Negative binomial regression, Fixed effects modeling, machine learning

Human mobility in the metabverse 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.

· Key skills: Scaling laws, statistical physics, blockchain analytics

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.

· Key skills: Generalized linear mixed models, statistical methods, healthcare analytics and innovation

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.

· Key skills: social networks, success metrics, NFT analytics

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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.

· Key skills: Statistical analysis, clinical innovation, funding ecosystem

Measuring scientific buzz using keywords July 2018 - June 2019

· Compaing 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.

· Key skills: Machine learning, predicting innovation, natural language processing

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

· Key skills: network analysis, clustering, natural language processing

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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.

· Key skills: Teaching, collaboration, commubnication

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.
- Key skills: Applied inference, customer analytics, natural language processing

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 Vasan, Marton Karsai, and Albert-Laszlo Barabasi.

Under review: Nature Human Behavior

The Clinical Trials Puzzle: How network effects limit drug discovery Nov 2023
Kishore Vasan, Deisy Gysi, and Albert-Laszlo Barabasi.

Cell iScience

Quantifying NFT-driven networks in crypto art Feb 2022
Kishore Vasan, Milan Janosov, and Albert-Laszlo Barabasi.

Scientific Reports

The hidden influence of communities in collaborative funding of clinical science Aug 2021
Kishore Vasan 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 Vasan*, 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 Vasan and Jevin West.

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

Measuring scientific buzz. March 2019
Kishore Vasan 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

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.
- Key skills: Network analysis, robustness and criticality, food analytics

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.
- Key skills: Network analysis, random walk models, internet analytics

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 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