INDIANA UNIVERSITY
OBSERVATORY ON SOCIAL MEDIA

ANNUAL REPORT
2023-2024

Dear Friends and Supporters,

This year marks the fifth anniversary of the Observatory on Social Media (OSoMe), and we are thrilled to share our journey with you in our annual report. OSoMe (pronounced "awesome") is dedicated to understanding the dynamics of online manipulation, empowering researchers, journalists, and citizens to confront the challenges of misinformation and social media manipulation.

Over the past five years, our work has not only illuminated the vulnerabilities of online networks but also fueled meaningful action. We pioneered research on social bots (a term we coined) and built tools widely used to detect and counter malicious actors. Our efforts have informed public policy and academic inquiry, supporting a global network of researchers and practitioners tackling these critical issues.

As we reflect on this milestone, we are also excited to expand our educational initiatives. Our course, *Mis(Information) Literacy*, will now be offered every year, equipping students with the critical thinking skills needed to navigate the complexities of the digital age. Soon, the course will be available as a general elective credit for all Indiana University students, broadening our impact across the campus.

Looking ahead to the next five years, we see both challenges and opportunities. The rapid rise of generative AI represents a new and formidable threat to the integrity of information. Large language models have made it alarmingly easy to produce realistic, large-scale disinformation campaigns, creating an unprecedented cybersecurity risk. And as the landscape of social media usage is shifting, so is our capability to access data from platforms. OSoMe is prepared to meet this challenge head-on.

The stories, achievements, and insights in this report are a testament to the dedication of our team and the support of our partners. Thank you for being part of OSoMe's first five years. We look forward to your continued partnership as we navigate the next five.

With gratitude and hope,

Fil Menczer

Director

New Affiliated Faculty

Marco Ajelli is an associate professor of epidemiology and biostatistics. His research leverages mathematical modeling and data science to provide a quantitative understanding of the key determinants and population processes that shape the epidemiology of infectious diseases, including the spread of accurate and inaccurate public health information. He published in journals such as *Science*, *Nature*, *PNAS*, *BMJ*, *Nat. Med.*, and *Lancet Infect. Dis.* He received the Bellman Prize in Mathematical Biosciences for his work on the effect of risk perception on infectious disease dynamics.

Jisun An is an assistant professor of informatics. She is a member of the Social Data and AI Lab, where she develops AI and NLP methods to understand, predict, and nudge online human behavior and to tackle various social problems, from media bias and framing, polarization, online hate, to healthy lifestyle and urban changes. She contributes to the enhancement and applications of large language models (LLMs). For example, she has examined the potential of LLMs in generating explanations for hate speech detection.

Justin Garcia is an evolutionary biologist and sex researcher. His research focuses on the evolutionary and biocultural foundations of romantic and sexual relationships across the life course. Justin has a dual faculty appointment with the Kinsey Institute and Indiana University's Department of Gender Studies. He also serves as Scientific Advisor to Match.com, lending his expertise to Singles in America (SIA), the online dating company's annual study on the attitudes and behaviors of single people in the United States.

Günther Jikeli holds the Erna B. Rosenfeld Professorship at IU's Institute for the Study of Contemporary Antisemitism. He is also an associate professor in Germanic Studies and Jewish Studies and leads the Social Media & Hate research lab. He is a historian and sociologist of modern Europe, with particular interests in the history of antisemitism and in critical antisemitism studies. In 2013, he was awarded the Raoul Wallenberg Prize in Human Rights and Holocaust Studies by the International Raoul Wallenberg Foundation and Tel Aviv University.

Haewoon Kwak is an associate professor of informatics. He co-runs the SODA Lab, focusing on the study of social phenomena through large-scale data and computational tools to tackle big societal problems. His research lies at the intersection of network science, machine learning, and computational social science across diverse domains, such as news media, online games, social media, sports, and politics. He is a lead author of "What is Twitter, a social network or news media?", a paper cited more than 10,000 times.

Thai Le is an assistant professor of computer science at the Luddy School. He has industry research experience at Amazon Alexa and Yahoo Research. His mission is to enhance the robustness, safety, and transparency of AI/ML models with critical applications in cybersecurity and social media contexts, ensuring that netizens can harness their power with safety and clarity. His work has been published in top-tier venues and featured in *ScienceDaily*, *DefenseOne*, and *Engineering and Technology Magazine*.

Cici Ling is an assistant professor of informatics. Her research spans security, privacy, psychology, and computational social science, with a focus on social media and niche communities, aiming to promote accessibility and inclusivity in digital applications. Her work has been published in top-tier journals and conferences, including IEEE S&P, USENIX, ACM CSCW, and AAAI ICWSM, and has been featured in *Wired*, *New Scientist*, and *The Washington Post*. Cici is the recipient of the 2023 EECS Rising Star award and the 2022 Meta PhD Fellowship in Security and Privacy.
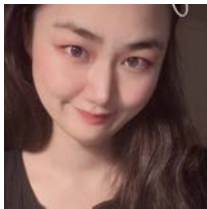
Maria Litvinova is an assistant professor in the epidemiology and biostatistics department. Her work seeks to evaluate policies concerning the prevention, mitigation, and control of disease spread. She applies her data science skills and background in social sciences to address public health challenges. She has published her research in prestigious journals, including *Science*. Maria's mission is to use data and evidence to inform and improve public health policies and practices.
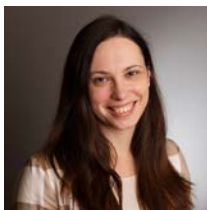
Jason Peifer is an associate professor of journalism in the Media School. His research explores facets of citizens' uncertainty about and trust in public institutions—especially as related to journalism practices, non-traditional news sources, and individuals' perceptions of the news media's importance. His scholarship has been published in a variety of outlets, including the *Journal of Communication*, *Journalism & Mass Communication Quarterly*, *Media Psychology*, *Computers in Human Behavior*, *Communication Methods & Measures*, and the *International Journal of Communication*.

Alexander Stewart is joining the IU informatics department in 2025. As an applied mathematician, Alex uses mathematical and computational models to study learning and decision-making in humans. His current focus is on combining such models with data and experiments to understand how individual-level decision-making scales up to produce population-level phenomena such as polarization, echo chambers, widespread misinformation, and extremism. He is especially interested in how these phenomena play out in online environments, where information flow is shaped by the interaction between individual decisions and platform rules and algorithms.

Student News

John Bollenbacher is a Research Data Scientist at the Research Triangle Institute (RTI)'s Center for Data Science and AI. In his recently defended dissertation, John defined a method for linking online social media content to offline outcomes with modern data science tools and causal inference methods, and demonstrated the method through case studies in public health and politics. He also demonstrated that individual social media interactions have lasting effects on individual users' attention and sentiments toward entities, such as people and places.

We are proud to share that the Civic Health Project has awarded a $5,000 grant to **Matthew DeVerna** for his innovative proposal to foster healthier discourse on social media. This project aims to combat partisan misinformation and reduce affective polarization through the development of an AI-powered browser extension that encourages constructive dialogue. The extension, which uses LLMs to identify and respond to false claims in real time, will prompt users with fact-checked information on divisive content, promoting more informed and respectful conversations. The end goal is a scalable, reliable tool that supports constructive online discussions, thus reducing the polarizing effects of misinformation.

Congratulations to OSoMe Ph.D. students, **Bao Tran Truong** and **Ozgur Can Seckin**, for being named finalists in the Prosocial Ranking Challenge, hosted by the Center for Human Compatible Artificial Intelligence! This competition aimed to develop new social media ranking algorithms that can mitigate potential harms and design systems toward more socially desirable outcomes. "Our approach focuses on promoting content that sparks diverse and positive engagement, while demoting toxic

content and interactions," Bao and Ozgur said in a joint statement. The pair believes this holistic evaluation of posts will help mitigate the negative impacts of recommender algorithms, particularly in terms of affective polarization.

We're thrilled to announce that three graduate students and one postdoctoral researcher from OSoMe have been awarded prestigious fellowships from the Institute for Humane Studies. These fellowships recognize and support their commitment to advancing research that fosters a greater understanding of human values, freedom, and civil society. In his proposal, "Unboxing the news-sharing behaviors around the U.S. 2022 midterm elections on Twitter, Meta, and Reddit," **Sangyeon Kim** will analyze news-sharing patterns across the three social media platforms during the 2022 U.S. midterm elections, examining the credibility of shared news sources and their associated partisan leanings. **Ozgur Can Seckin** received a fellowship for his proposal, "Building Bridges: Leveraging LLMs to Foster Understanding and Create Rapport Across Political Divides." **Matthew DeVerna** was awarded for his proposal "Fostering civil discussions about partisan misinformation on social media with artificial intelligence." Finally, **Bao Tran Truong's** proposed "Developing Prosocial Recommender Algorithms to Reduce Affective Polarization on Social Media."

OSoMe Awesome Speakers

Led by PhD student Matthew DeVerna and our executive director Caitlin Watkins, the series is designed as a platform to showcase groundbreaking work by leading researchers on the subjects of social media manipulation, information integrity, impacts, and interventions.

In the Fall 2023 we hosted talks by **Joshua Tucker** (New York University), **Gianluca Stringhini** (Boston University), **Luca Luceri** (University of Southern California), **Franziska Roesner** (University of Washington), **Brendan Nyhan** (Dartmouth College), **Ceren Budak** (University of Michigan), and **Renée DiResta** (Stanford University).

We also had a star lineup of OSoMe Awesome Speakers in Spring 2024:

- **David Lazer** (Northeastern) spoke about *The Emergent Structure of the Online Information Ecosystem*
- **David Broniatowski** (George Washington University) gave a talk on *The Efficacy of Facebook's Vaccine Misinformation Policies and Architecture During the COVID-19 Pandemic*
- **David Rand** (MIT) presented results about *Reducing Misinformation Sharing on Social Media Using Digital Ads*
- **Sandra González-Bailón** (University of Pennsylvania) talked about *Social and Algorithmic Choices in the Transmission of Information*
- **Andrew Guess** (Princeton) presented his work on *Algorithmic Recommendations and Polarization on YouTube*
- **Kate Starbird** (University Washington) discussed *Facts, Frames, and (Mis)Interpretations: Understanding Rumors as Collective Sensemaking*
- Finally, **Sinan Aral** (MIT) presented a paper on *A Causal Test of the Strength of Weak Ties*

This Fall 2024, OSoMe Awesome Speakers include **Jo Lukito** (UT Austin), **Kristina Lerman** (University of Southern California), **Jeremy Blackburn** (Binghamton University), **Dean Freelon** (University of Pennsylvania), and **Amy Zhang** (University of Washington).

For more details about upcoming awesome talks, or to watch recordings of previous talks, please visit osome.iu.edu/events/speaker-series.

New Tools
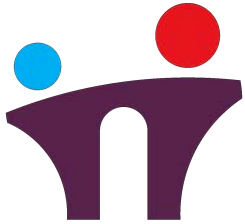
Facebook News Bridge is a browser extension that utilizes a customized generative AI model to identify low-credibility posts on Facebook and generate thoughtful responses aimed at bridging political divides. As users scroll through their Facebook feed, the extension analyzes posts containing links to news sources for potential misinformation. By referencing a continually updated reliable news database, the extension assesses the factuality of claims in an article. Users are given the option to generate an informed and relevant response that can be shared with the original poster.
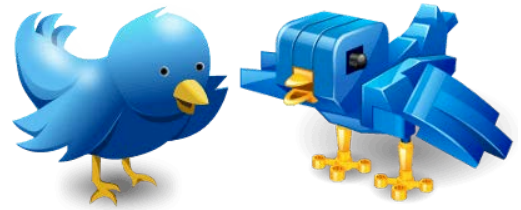
Coordiscope is a web tool designed to detect and visualize inauthentic coordinated behavior on social media. Coordiscope uses the Behavioral Language for Online Classification (BLOC) and the Helios Web visualization library, both developed at OSoMe, to compare the behavior of social media accounts. BLOC represents account behaviors through "words" that denote sequences of actions and content. Accounts with suspiciously similar behaviors are visualized as colored clusters within a network, making it easy to identify potential information operations. Coordiscope includes cases about coordinated influence campaigns from 17 countries, comprising over 200 million posts. Alternatively, users can query and visualize real-time data from Bluesky.
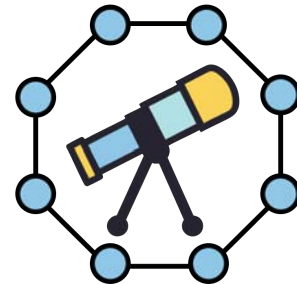
OSoMe Mastodon Search provides a Web interface to collect data from Mastodon, a growing federated social media platform. While Mastodon data is distributed across many servers (so-called "instances"), the tool makes it easy to search content by keywords and hashtags across multiple instances. Users can retrieve statuses, explore accounts, access hashtag metadata, discover Mastodon instances, and examine comprehensive documentation.

Botometer X replaces the original Botometer website, which calculated the likelihood that a Twitter account was automated – a so-called social bot. Botometer served hundreds of thousands of queries daily, but was disabled after Twitter (now X) suspended free access to their data for researchers. In its place, Botometer X now relies on a historical archive of over a billion pre-calculated scores. Botometer X is also accessible via a new endpoint of the Botometer Pro API, allowing researchers to fetch bot scores in batches. A Python library helps programmers interact with the API.

Hoaxy2 is an updated version of the Hoaxy tool, which was used by fact-checkers around the world to visualize temporal and network aspects of the spread of information online, as well as amplification by social bots. Each node in the network represents an account and two nodes are connected if a post is passed between the two. The color of a connection indicates the type of post: reposts, replies, quotes, or mentions. Users can interact with the visualizations, zoom in, and click for detailed information. Since the free Twitter API was disabled, paid subscribers can now input their own API keys and real-time search was restored through the Bluesky API.

Funded Projects

Funded by the **Multidisciplinary University Research Initiative (MURI)**, OSoMe is leading a multi-institutional team to assess the role that artificial intelligence may play in strengthening the influence of online communications — including misinformation and radicalizing messages. The five-year effort unites experts across a wide range of disciplines, including psychology and cognitive science; communications; folklore and storytelling; artificial intelligence and natural language processing; complex systems and network science; and neurophysiology. Stanford University, Boston University, and the University of California at Berkeley are collaborating institutions.

Working with partners at the University of Applied Sciences and Arts of Southern Switzerland, the University of Zurich, and the University of Southern California, our project titled "CAll for Regulation Support In Social MediA" (CARISMA) is supported by the **Swiss National Science Foundation**. We are developing an agent-based model of social media to evaluate different moderation policies intended to mitigate online harm. During the first year of the project, we have focused on the effect of delay in the removal of illicit content and on a scalable implementation of the model to simulate large populations of social media users.

Our collaboration continues with partners at the University of Southern California and the University of Maryland, supported by the **DARPA** project titled "UPSCALE: Universal Population Response Characterization Algorithms for OnLine Environments." Our team is actively engaged in the development of sophisticated machine-learning methods that combine multiple indicators to detect and characterize influence campaigns, their targets, and their tactics.

OSoMe has been very fortunate to receive several awards from the **National Science Foundation** this year. Many of our researchers utilize NSF ACCESS, an advanced computing and data resource program. Matthew DeVerna, one of the students involved, shared his experience with IU's Jetstream-2, a high-performance computing resource with allocations provided through ACCESS. "Jetstream-2 has been incredibly beneficial for my work," DeVerna said. "Its supercomputing capabilities and flexibility allowed me to conduct complex simulations and data analyses that would have

been impossible on standard computing platforms. This capability significantly accelerated my research progress and greatly enhanced the quality of my findings." Student-led projects like these are encouraged by the NSF ACCESS program. "We're excited to extend these resources," said OSoMe's Executive Director Caitlin Watkins. "By enabling student access to advanced computational tools, we're not only boosting the quality of their research experience but also expanding its impact."

In collaboration with PIs at the University of Massachusetts Amherst and the University of Illinois at Urbana-Champaign, a new NSF SaTC project titled **_Identifying the Demographic Representativeness of Social Media Polls_** aims to investigate and mitigate the harmful effects of social media polls by identifying their biases, studying their prevalence and dissemination, and developing corrective measures. Social media polls are not scientific and can mislead the public by favoring particular responses. The project will help maintain the integrity of public opinion perception.

Two other new NSF projects led by YY Ahn will explore the use of AI in the "Science of Science," modeling the global techno-scientific system. The model aims to capture the complex and emergent interdependencies among technologies; the funders, resources, researchers, and universities that catalyze and invent them; the workforces and organizations that produce them; the markets that consume them; and the impact of scientific cooperation across countries and sectors.

Research Updates

On the Role of the Facebook Algorithm

Filippo Menczer co-authored an eLetter in *Science*, questioning a study that suggested Facebook's algorithm does not contribute to political polarization on the platform. The study, "How do social media feed algorithms affect attitudes and behavior in an election campaign?" was published in *Science* in July 2023 and examined how the platform presented information to users around the 2020 U.S. elections. In the eLetter, Menczer and coauthors point out that during the widely-reported study, Meta had temporarily introduced a series of changes to its algorithm to reduce the spread of misinformation. Those changes were successful, cutting user views of misinformation by at least 24 percent, but were not made permanent, undermining the original study's wide interpretation that Facebook's standard algorithm is good at stopping misinformation. While social media platforms can limit untrustworthy content, they may not have the financial incentive to modify their algorithms in such a way.

- [Context matters in social media. Thorp, H. H and Vinson, V., *Science*](#)

- [A study found Facebook's algorithm didn't promote political polarization. Critics have doubts. Kupferschmidt, K. *Science*](#)

- [Social media algorithms can curb misinformation, but do they? Bagchi, C.; Menczer, F.; Lundquist, J.; Tarafdar, M.; Paik, A.; and Grabowicz, P. A., *Science*. eLetter](#)

Modeling the Effects of Adversarial Manipulation Tactics

Social media, often considered the modern public square, is susceptible to adversarial tactics where malicious actors use inauthentic accounts to amplify disinformation and undermine the quality of shared content. Through simulation models of information diffusion, we find that certain structural features of social media, such as the presence of hub accounts, make online communities particularly vulnerable to low-quality content going viral. Infiltration of communities, combined with targeted manipulation of influential

or vulnerable individuals, can escalate the spread of misinformation. We also developed AI (graph embedding) methods that social media platforms could use to counter these kinds of manipulations by mining news-sharing networks to evaluate the credibility of unknown accounts. Our framework accurately detects low-credibility accounts before misinformation proliferates. These findings highlight promising countermeasures to strengthen user resilience and ensure a healthier information ecosystem.
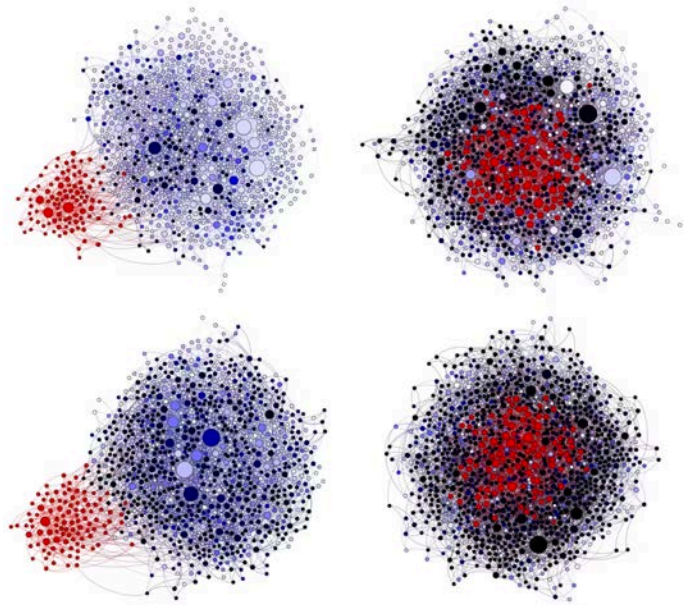
- How foreign operations are manipulating social media to influence your views. Menczer, F., *The Conversation*

- Quantifying the vulnerabilities of the online public square to adversarial manipulation tactics. Truong, B. T.; Lou, X.; Flammini, A.; and Menczer, F., *PNAS Nexus*

- Account credibility inference based on news-sharing networks. Truong, B. T.; Allen, O. M.; and Menczer, F., *EPJ Data Science*

AI Abuse

In last year's report, we mentioned preliminary findings of a study regarding a ChatGPT-controlled botnet. Our manuscript "Anatomy of an AI-powered malicious social botnet" was presented at the 2024 AAAI International Conference on Web and Social Media and published in the Journal of Quantitative Description: Digital Media.

Our paper "Characteristics and Prevalence of Fake Social Media Profiles with AI-generated Faces: was published in the Journal of Online Trust & Safety. We found that at least 9-18k daily active X accounts use AI profiles to spread scams, spam, amplify coordinated messages, and other harmful behaviors.

- Anatomy of an AI-powered malicious social botnet. Yang, K.; and Menczer, F., *JQD:DM*

- Characteristics and prevalence of fake social media profiles with AI-generated faces. Yang, K.; Singh, D.; and Menczer, F., *Journal of Online Trust and Safety*

AI Fact-Checking

Our research on AI-supported fact-checking and large language models (LLMs) examines the potential and limitations of these technologies in countering misinformation. While LLMs, such as ChatGPT and Google Gemini, show promise in accurately flagging most false claims, our studies reveal mixed impacts on users' discernment and sharing behaviors. In controlled experiments, AI fact-checking information alone did not enhance participants' ability to assess or share accurate news as effectively as human-generated fact checks, and even increased belief in certain mislabeled or ambiguous content. The paper reporting on these findings is appearing in the *Proc. Nat. Acad. Science (PNAS).*

The possible applications of LLMs to fact-checking bring both opportunities and risks beyond their interactions with humans. These tools tend to produce false, erroneous, or misleading content—commonly referred to as hallucinations. In a recent paper in *Nature Machine Intelligence*, we explore key challenges, imminent threats, and possible solutions to these factuality issues.

Search engines increasingly leverage LLMs to generate direct answers, and AI chatbots now access the Internet for fresh data. As information curators for billions of users, LLMs must assess the accuracy and reliability of different sources. We audited eight widely used LLMs from three major providers -- OpenAI, Google, and Meta -- to evaluate their ability to
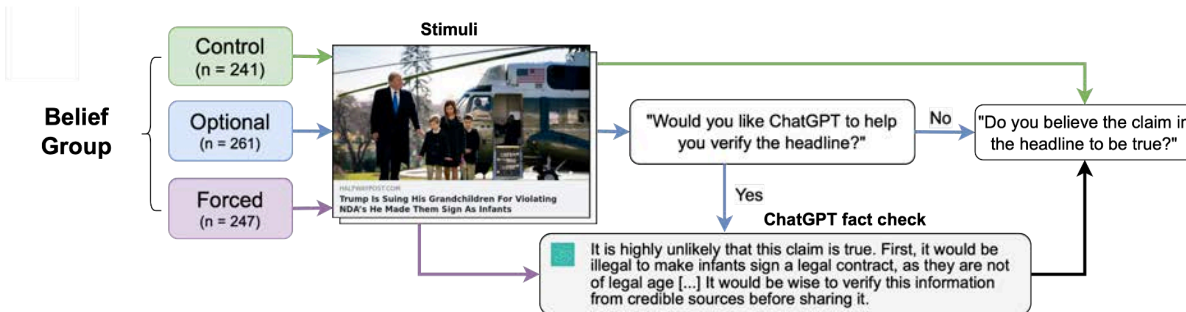
discern credible and high-quality information sources from low-credibility ones. We found that while LLMs exhibit a high level of agreement among themselves, their ratings align only moderately with human expert evaluations. We further observed a liberal bias in credibility ratings yielded by all LLMs in default configurations. More concerning, it is easy to generate politically biased ratings simply by assigning partisan identities to LLMs. These findings have important implications for the use of LLMs in curating news and political information.

Knowledge graphs play a pivotal role in various applications, such as question-answering and fact-checking. Abstract Meaning Representation (AMR) renders text as knowledge graphs. Evaluating the quality of these graphs involves matching them to each other and to the source text. We introduced a novel AMR similarity measure, called rematch, which ranks first and second in two benchmark tasks among state-of-the-art metrics. Rematch is also five times faster than the next most efficient metric.

- Fact-checking information generated by a large language model can decrease news discernment. DeVerna, M. R; Yan, H. Y.; Yang, K.; and Menczer, F., *PNAS*

- Factuality challenges in the era of large language models and opportunities for fact-checking. Augenstein, I.; Baldwin, T.; Cha, M.; Chakraborty, T.; Ciampaglia, G. L.; Corney, D.; DiResta, R.; Ferrara, E.; Hale, S.; Halevy, A.; Hovy, E.; Ji, H.; Menczer, F.; Miguez, R.; Nakov, P.; Scheufele, D.; Sharma, S.; and Zagni, G., *Nature Machine Intelligence*

- Accuracy and Political Bias of News Source Credibility Ratings by Large Language Models. Yang, K.; and Menczer, F. *Technical Report*

- Rematch: Robust and Efficient Matching of Local Knowledge Graphs for Improved Structural and Semantic Similarity. Kachwala, Z.; An, J.; Kwak, H.; and Menczer, F., In *Findings of the Association for Computational Linguistics (NAACL)*

Social Media, Ethics, and Political Crisis in Sri Lanka

John Paolillo's research explores the role of social media in political communication in Sri Lanka amid the country's complex social landscape. Since telecommunications liberalization in the late 1990s, platforms like Facebook, WhatsApp, and Telegram have become critical in political campaigns, journalism, and activism. These platforms enabled the 2022 mass protests that led to the president's ousting, but they also faced criticism for allowing hate speech that incited riots. Recently, the government passed the Online Safety Act, aiming to tighten speech regulations, though it remains unimplemented. Paolillo and his students analyze ethical issues in platform use, the impact of Facebook during protests, the adaptation of Buddhist monks to social media, Facebook's role since the protests, and leakage from TikTok to Facebook Reels.

- [Social Media, Ethics and Political Crisis in Sri Lanka. Paolillo, J. C. In Casas-Roma, J.; Conesa, J.; and Caballé, S., editor(s), *Technology, Users and Uses: Ethics and Human Interaction Through Technology and AI*, pages 364–392. Ethics International Press](#)

Belief Networks

Our current research explores belief networks to model how information spreads and influences individuals in complex social systems. By examining belief contagion, we aim to integrate cognitive mechanisms—such as biases and resonance—with traditional social contagion theory, addressing the open challenge of modeling how beliefs and opinions evolve across a spectrum of contagion dynamics, from simple to complex. This approach allows us to capture the resistance that often characterizes complex contagion, where people may be selective or hesitant to adopt new beliefs based on existing cognitive biases
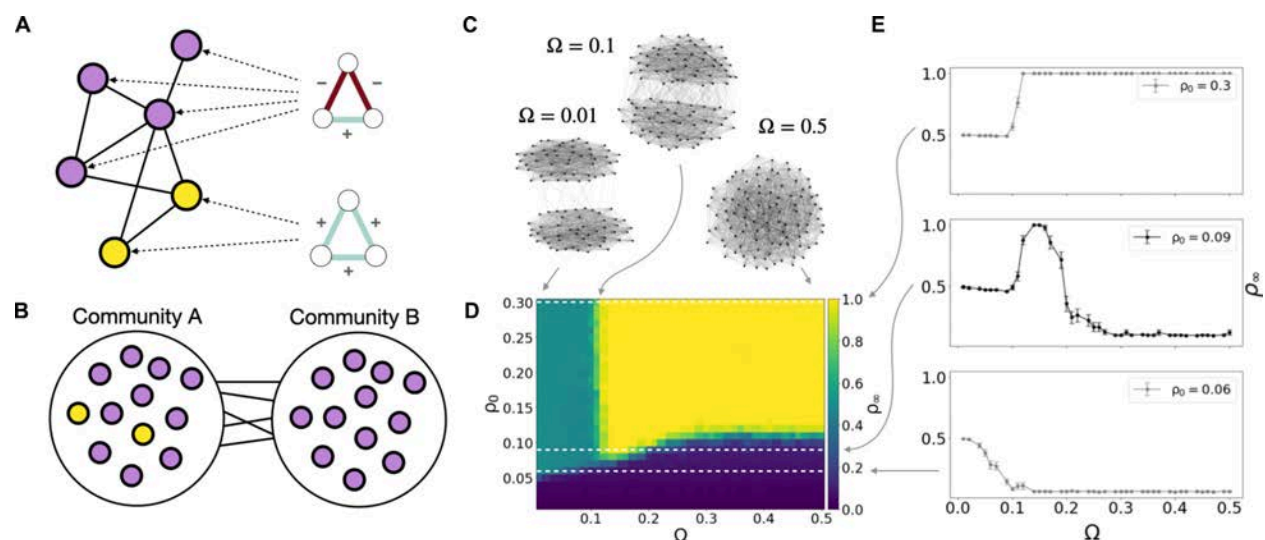
or social contexts. We are applying these models to understand how artificial intelligence and personalized content can influence social and psychological dynamics. By simulating agents with belief networks, we can study how targeted, resonant messages spread and impact both artificial agents and real individuals, highlighting AI's potential to either polarize or unify audiences depending on the social contexts it engages. This research also incorporates real-life data and physiological responses to measure how strongly individuals resonate with AI-generated content, bringing us closer to understanding and potentially countering the effects of AI-driven misinformation and radicalization online.

- Emergence of simple and complex contagion dynamics from weighted belief networks. Aiyappa, R.; Flammini, A.; and Ahn, Y., *Science Advances*

Beyond the Highlights: Selected Publications

While this report focuses on a selection of our most prominent research and projects, our team has contributed to a broader body of work. Below is a list of selected additional publications.

- Toxic Synergy Between Hate Speech and Fake News Exposure. Kim, M.; Elmas, T.; and Menczer, F. *In Proc. ICWSM International Workshop on Cyber Social Threats (CySoc)*
- Identifying and characterizing superspreaders of low-credibility content on Twitter. DeVerna, M. R.; Aiyappa, R.; Pacheco, D.; Bryden, J.; and Menczer, F. *PLOS ONE*
- Generative AI and science communication in the physical sciences. Biyela, S.; Dihal, K.; Gero, K.; Ippolito, D.; Menczer, F.; Schäfer, M.; and Yokoyama, H. *Nature Reviews Physics*
- The Dawn of Decentralized Social Media: An Exploration of Bluesky's Public Opening. Sahneh, E. S.; Nogara, G.; DeVerna, M. R.; Liu, N.; Luceri, L.; Menczer, F.; Pierri, F.; and Giordano, S. *Proc. IEEE/ACM Intl. Conf. on Advances in Social Network Analysis and Mining (ASONAM)*
- Affinities for competing knowledge systems: Perceived news media importance and social media importance across cultural contexts. Peifer, J. T., Moon, J., Lee, T., and Song, H. *Paper presented 2024 AEJMC Conference*
- The moderating role of partisanship in the relationship between perceptions of media bias and COVID-19 vaccine hesitancy in the U.S. Li, W., Yan, H. Y., and Shanahan, J. *Communication Research Reports*
- Exposure to social bots amplifies perceptual biases and regulation propensity. Yan, H.Y., Yang, KC., Shanahan, J. et al. *Scientific Reports*
- Television, authoritarianism, and support for Trump: A replication. Hermann, E., Morgan, M., Shanahan, J., and Yan, H. *Public Opinion Quarterly*
- Stakeholder perceptions of regulatory responses to misinformation in Kenya and Senegal. Mudavadi, K. C., Matanji, F., Layire, D., Tully, M., and Madrid-Morales, D. *Journalism.*

- [Exploring Kenyans' Interactions with Misinformation on WhatsApp. Mudavadi, K. C., Tully, M., and Lomoywara, D. B.](#) *Mobile Media & Communication.*