

Kai-Cheng Yang

CONTACT Luddy School of Informatics, Computing, and Engineering
INFORMATION Indiana University Bloomington
901 E 10th street
Bloomington, IN 47408

yangkc@iu.edu
kaichengyang.me
Google Scholar

EDUCATION Ph.D., Informatics, Complex Systems track, Indiana University
M.S., Theoretical Physics, Lanzhou University (China)
B.S., Theoretical Physics, Lanzhou University (China)

August 2017—
June 2017
June 2014

AWARDS

- IU School of Public Health Big Idea Challenge (\$250) 2020
- Informatics Ph.D. Student Conference Travel Awards (\$1000) 2020
- IU GISA Conference Travel Awards (\$700) 2019
- Informatics Ph.D. Student Conference Travel Awards (\$1000) 2019
- NSF Research Trainee scholarship in Complex Networks and Systems (\$5000) 2018

RESEARCH PROJECTS

Bad actors on social media PI: Filippo Menczer

- Social bot detection: Botometer[®] [C3, J6], BotometerLite [C2]
- Bot amplification detection & visualization: BotSlayer [W2, J7], BEV [W3], Hoaxy[®]
- Misinformation & bots [W1, J10]
- Human bias & bots [J5]
- Social media ecosystem bias [C1, J4]

Public health (opioid epidemic) PIs: Brea Perry, Yong-Yeol Ahn

- High risk patients detection [J2, J8]
- Policy effects [J3]

Network science

- Network embedding [C4]
- Spreading phenomena [J9, J11]

PUBLICATIONS Journal Articles

- J1. Yang, K.-C., Aronson, B. & Ahn, Y.-Y. BiRank: Fast and Flexible Ranking on Bipartite Networks with R and Python. *In submission* (2020).
- J2. Aronson, B., Yang, K.-C., Odabas, M., Ahn, Y. Y. & Perry, B. L. Comparing Measures of Centrality in Bipartite Social Networks: A Study of Drug Seeking for Opioid Analgesics. *SocArXiv preprint. osf.io/preprints/socarxiv/hazvs* (2020).
- J3. Lee, B., Zhao, W., Yang, K.-C., Ahn, Y.-Y. & Perry, B. Unintended Consequences of State Policy Interventions in the US Opioid Crisis. *In submission* (2020).
- J4. Wen, C., Pacheco, D., Yang, K.-C. & Menczer, F. Neutral Bots Reveal Political Bias on Social Media. *arXiv preprint arXiv:2005.08141* (2020).

- J5. Yan, H., **Yang, K.-C.**, Menczer, F. & Shanahan, J. Asymmetrical Perceptions of Partisan Political Bots. *In submission* (2020).
- J6. **Yang, K.-C.**, Varol, O., Davis, C. A., Ferrara, E., Flammini, A. & Menczer, F. Arming the public with artificial intelligence to counter social bots. *Human Behavior and Emerging Technologies*, e115 (2019).
- J7. Hui, P.-M., **Yang, K.-C.**, Torres-Lugo, C., Monroe, Z., McCarty, M., Serrette, B., Pentchev, V. & Menczer, F. BotSlayer: real-time detection of bot amplification on Twitter. *Journal of Open Source Software* **4**, 1706. issn: 2475-9066 (2019).
- J8. Perry, B. L., **Yang, K.-C.**, Kaminski, P., Odabas, M., Park, J., Martel, M., Oser, C. B., Freeman, P. R., Ahn, Y.-Y. & Talbert, J. Co-prescription network reveals social dynamics of opioid doctor shopping. *PLoS one* **14**, e0223849 (2019).
- J9. Zhang, Y.-J., Wu, Z.-X., Holme, P. & **Yang, K.-C.** Advantage of Being Multicomponent and Spatial: Multipartite Viruses Colonize Structured Populations with Lower Thresholds. *Physical Reviews Letters* **123**. (Editors' Suggestion), 138101 (2019).
- J10. Shao, C., Ciampaglia, G. L., Varol, O., **Yang, K.-C.**, Flammini, A. & Menczer, F. The spread of low-credibility content by social bots. *Nature communications* **9**, 4787 (2018).
- J11. **Yang, K.-C.**, Wu, Z.-X., Holme, P. & Nonaka, E. Expansion of cooperatively growing populations: Optimal migration rates and habitat network structures. *Physical Reviews E* **95**, 012306 (2017).

Conference Proceedings

- C1. **Yang, K.-C.**, Hui, P.-M. & Menczer, F. *How Twitter Data Sampling Biases U.S. Voter Behavior Characterizations* in *arXiv preprint arXiv:2006.01447* (2020).
- C2. **Yang, K.-C.**, Varol, O., Hui, P.-M. & Menczer, F. *Scalable and Generalizable Social Bot Detection through Data Selection* in *Proceedings of the AAAI Conference on Artificial Intelligence* **34** (New York, NY, USA, 2020), 1096–1103.
- C3. Sayyadiharikandeh, M., Varol, O., **Yang, K.-C.**, Flammini, A. & Menczer, F. *Detection of Novel Social Bots by Ensembles of Specialized Classifiers* in *arXiv preprint arXiv:2006.06867* (2020).
- C4. Yoon, J., **Yang, K.-C.**, Jung, W.-S. & Ahn, Y.-Y. *Persona2vec: A Flexible Multi-role Representations Learning Framework for Graphs* in *arXiv preprint arXiv:2006.04941* (2020).

Workshop/Demo Papers

- W1. **Yang, K.-C.**, Torres-Lugo, C. & Menczer, F. *Prevalence of Low-Credibility Information on Twitter During the COVID-19 Outbreak* in *arXiv preprint arXiv:2004.14484* (2020).
- W2. Hui, P.-M., **Yang, K.-C.**, Torres-Lugo, C. & Menczer, F. *BotSlayer: DIY Real-Time Influence Campaign Detection* in *Proceedings of the International AAAI Conference on Web and Social Media* **14** (Virtual, 2020), 980–982.
- W3. **Yang, K.-C.**, Hui, P.-M. & Menczer, F. *Bot Electioneering Volume: Visualizing Social Bot Activity During Elections* in *Companion Proceedings of The 2019 World Wide Web Conference* (San Francisco, CA, USA, 2019), 214–217.

TALKS

- Prevalence of Low-Credibility Information on Twitter During the COVID-19 Outbreak
International Workshop on Cyber Social Threats—CySoc 2020 (Virtual) 06/08/2020

- BotometerLite
AAAI'20 (New York, USA) 02/10/2020
- Bot Electioneering Volume
The Fourth Workshop on Computational Methods in Online Misbehavior—CyberSafety 2019 (San Francisco, USA) 05/13/2019
- Expansion of Cooperatively Growing Populations on Networks
Chinese Physical Society Fall Meeting (Beijing, China) 09/04/2016

TEACHING **Associate Instructor, Indiana University**
I590 Applied Data Science Fall 2017, Spring 2018

APPOINTMENTS **Research Assistant, Indiana University**
Doctor shopping project Fall 2018 – Summer 2020

SERVICE

Journal Reviewer

- Social Network Analysis and Mining
- ACM Digital Threats: Research and Practice
- IEEE Internet Computing

Conference Reviewer

- ICWSM'20, '21

Last updated: June 21, 2020