

# Kai-Cheng Yang

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Google Scholar

EDUCATION Ph.D., Informatics, Complex Systems track, Indiana University August 2017—  
M.S., Theoretical Physics, Lanzhou University (China) June 2017  
B.S., Theoretical Physics, Lanzhou University (China) June 2014

## HONORS AND AWARDS

### 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

## PUBLICATIONS Journal Articles

- J1. Wen, C., Pacheco, D., **Yang, K.-C.** & Menczer, F. Neutral Bots Reveal Political Bias on Social Media. *arXiv preprint arXiv:2005.08141* (2020).
- J2. **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).
- J3. 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).
- J4. 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).
- J5. Yan, H., **Yang, K.-C.**, Menczer, F. & Shanahan, J. Asymmetrical Perceptions of Partisan Political Bots. *In submission* (2019).
- J6. 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).
- J7. 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).
- J8. **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** (2020), 1096–1103.

#### 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. **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* (ACM, San Francisco, CA, USA, 2019), 214–217.

#### RESEARCH PROJECTS

##### **Social bots** PI: [Filippo Menczer](#)

- [Botometer®](#), popular bot detection tool [J2]
- BotometerLite, a scalable bot detection tool that scales up to Firehose volume and yields accurate results [C2]
- [Bot Electioneering Volume](#), visualization of bot-like activity during elections [W2]
- Revealing how social bots amplify the spread of misinformation [J7]
- Characterizing human bias in political social bot identification tasks [J5]

##### **Bad actors on social media** PI: [Filippo Menczer](#)

- [Hoaxy®](#), visualization of information spreading on Twitter
- [BotSlayer](#), a free, customizable and distributed tool that detects potential coordinated manipulation on Twitter in real time [J3]
- [BotSlayer-CE](#), the open source version of BotSlayer [J3]

##### **Opioid doctor shopping** PIs: [Brea Perry](#), [Yong-Yeol Ahn](#)

- Building a pipeline that manages, wrangles the large scale dataset for the whole team
- Proposing new network based indicators for opioid doctor shopping [J4]
- Using machine learning to predict opioid overdoses

##### **Spread of population** Past project PI: [Zhi-Xi Wu](#)

- Modeling cooperatively growing populations' expansion on networked habitats [J8]
- Modeling epidemic process of multipartite viruses on networks [J6]

#### TALKS

- BotometerLite  
AAAI'20 (New York, USA) 02/10/2020
- Bot Electioneering Volume  
The Fourth Workshop on Computational Methods in Online Misbehavior (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 – Spring 2020

RELEVANT  
COURSES

**Machine learning**

- CSCI-B 555 Machine Learning
- CSCI-B 659 Applying Machine learning Techniques in Computational Linguistics
- CSCI-B 659 Learning Theory & Graphical Models

SKILLS

**Computational**

Frequent user of Python (Pandas, Matplotlib, Scikit-learn, NetworkX, etc), SQL for data analysis.

Familiar with HTML, CSS, JavaScript and Flask for web applications.

SERVICE

**Journal Reviewer**

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

**Conference Reviewer**

- ICWSM'20, '21

Last updated: June 4, 2020