Kai-Cheng Yang

CONTACT INFORMATION

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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.**, Varol, O., Hui, P.-M. & Menczer, F. Scalable and Generalizable Social Bot Detection through Data Selection. *Accepted by AAAI'20* (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. **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 [C1]
- 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 pipline 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

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