

# Kai Shu

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RESEARCH INTERESTS	Data Mining, Machine Learning, Social Computing, Artificial Intelligence	
EDUCATION	<b>Arizona State University</b> (ASU), Tempe, AZ, USA • Ph.D. in Computer Science • Dissertation: Understanding Disinformation: Learning with Weak Social Supervision • Dean’s Dissertation Award Winner, ASU Fulton Schools of Engineering • Advisor: Professor Huan Liu (Fellow of ACM, AAAS, IEEE, AAAI) <b>Chongqing University</b> , Chongqing, China • Master of Science, Computer Science and Technology <b>Chongqing University</b> , Chongqing, China • Bachelor of Engineering, Network Engineering	Sept. 2015 - July 2020 Sept. 2012 – Jun. 2015 Sept. 2008 – Jun. 2012
PROFESSIONAL EXPERIENCES	<b>Illinois Institute of Technology</b> , Chicago, Illinois <i>Gladwin Development Chair Assistant Professor</i> <b>Arizona State University</b> , Tempe, Arizona <i>Research Assistant</i> , Supervisor: Huan Liu <b>Microsoft Research</b> , Redmond, Washington <i>Research Intern</i> , Mentors: Ahmed Hassan Awadallah and Susan Dumais <b>Yahoo Research</b> , Sunnyvale, California <i>Research Intern</i> , Mentors: Liangda Li and Yunhong Zhou <b>Chinese Academy of Science</b> , Beijing, China <i>Research Visiting Scholar</i> , Host: Ping Luo <b>Hewlett-Packard Labs</b> , Beijing, China <i>Research Intern</i> , Mentor: Ping Luo	Aug. 2020 - Present Sep. 2015 – July 2020 May. 2019 – Aug. 2019 May. 2018 – Aug. 2018 Jun. 2014 – Jun. 2015 Mar. 2012 – Sept. 2013
HONERS & AWARDS	<ul style="list-style-type: none"><li>• AI Global High-Potential Young Scholar Award, Baidu</li><li>• Cisco Research Award, Cisco Systems, Inc.</li><li>• 2022 AI 2000 Most Influential Scholar Honorable Mention, Aminer</li><li>• Finalist, Facebook (Meta) Research Faculty Award, Meta</li><li>• Finalist, Distinguished Doctoral Dissertation Award, BenchCouncil 2021</li><li>• Google Cloud Research Credits Award, Google</li><li>• IDDP Research Fellowship, GWU</li><li>• Dean’s Dissertation Award, ASU</li><li>• Rising Star Award, BDSC 2020</li><li>• Best Reviewer Award, ICWSM 2020</li><li>• CIDSE Doctoral Fellowship Award, Arizona State University</li><li>• ACM SIGKDD Student Travel Award</li><li>• Disinformation Challenge Award Winner, SBP-BRiMS 2018</li><li>• CIDSE Doctoral Fellowship Award, Arizona State University</li></ul>	April 2022 April 2022 Feb. 2022 Dec. 2021 Nov. 2021 Nov. 2021 Jan. 2021 Nov. 2020 Aug. 2020 June 2020 March 2020 June 2019 July 2018 Aug. 2015

SUMMARY OF  
PUBLICATIONS

**Published:** 1 monograph, 2 books, 2 tutorials, 4 book chapters, 41 conference papers, 17 journal papers, 3 patents, 9 workshop and demo papers.  
**Impact:** 5800+ citations, h-index: 27, i10-index: 43 (as of June 5th 2022)

\*\*\*Please refer to the details about the list of publications at my google scholar profile page:  
<https://scholar.google.com/citations?user=-6bAV2cAAAAJ&hl=en>

TUTORIALS

- [1] Reza Zafarani, Xinyi Zhou, **Kai Shu**, Huan Liu “Fake News Research: Theories, Detection Strategies, and Open Problems”, the 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2019**).  
[Media coverage:](#) [A Blog in Japanese][Datanami]
- [2] Xinyi Zhou, Reza Zafarani, **Kai Shu**, Huan Liu “Fake News: Fundamental Theories, Detection Strategies and Challenges”, the 12th International Conference on Web Search and Data Mining (**WSDM 2019**).  
[Media coverage:](#) [Psychology Today]

BOOKS OR BOOK  
CHAPTERS

- [3] **Kai Shu**, Ahmadreza Mosallanezhad, and Huan Liu. “Cross-Domain Fake News Detection on Social Media: A Context-Aware Adversarial Approach.”, Chapter, in *Frontiers in Fake Media Generation and Detection*, Springer Press, 2022.
- [4] Tanmoy Chakraborty, **Kai Shu**, H. Russell Bernard, Huan Liu, and Md Shad Akhtar (Eds.). “Combating Online Hostile Posts in Regional Languages during Emergency Situation.”, *Communications in Computer and Information Science 1402*, ISBN 978-3-030-73695-8.
- [5] **Kai Shu**, Suhang Wang, Dongwon Lee, and Huan Liu, “Mining Disinformation and Fake News: Concepts, Methods, and Recent Advancements. ”, *Lecture Notes in Social Network (LNSN)*, Springer Press, 2020.
- [6] **Kai Shu**, Suhang Wang, Dongwon Lee, and Huan Liu, Editors. “Fake News, Disinformation, and Misinformation in Social Media”, Springer, to appear in early 2020. Forthcoming.
- [7] **Kai Shu** and Huan Liu “Detecting Fake News on Social Media”, Morgan & Claypool Publishers, 2019.
- [8] **Kai Shu**, H. Russell Bernard, Huan Liu “Studying Fake News via Network Analysis: Detection and Mitigation.”, chapter. Editors: Nitin Agarwal, Nima Dokoohaki, and Serpil Tokdemir. *Lecture Notes in Social Networks (LNSN)*, Springer Press, 2018.

REFEREED  
CONFERENCE  
PUBLICATIONS

- [9] Han Wang\*, Jayashree Sharma\*, Shuya Feng, **Kai Shu**, and Yuan Hong, “A Model-Agnostic Approach to Differentially Private Topic Mining”, in proceedings of 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2022**)
- [10] Guoqing Zheng, Giannis Karamanolakis, **Kai Shu**, Ahmed Hassan Awadallah, “WAL-NUT: A Benchmark on Semi-weakly Supervised Learning for Natural Language Understanding”, in Proceedings of 2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL 2022**).
- [11] Xinyi Zhou, **Kai Shu**, Vir V. Phoha, Huan Liu and Reza Zafarani, ““This is Fake! Shared it by Mistake”: Assessing the Intent of Fake News Spreaders.”, in Proceedings of 31st The Web Conference (**WWW 2022**).

- [12] Ahmadreza Mosallanezhad, Mansooreh Karami, **Kai Shu**, Michelle Mancenido and Huan Liu, “Domain Adaptive Fake News Detection via Reinforcement Learning”, in Proceedings of 31st The Web Conference (**WWW 2022**).
- [13] Tianxiang Zhao, Enyan Dai, **Kai Shu**, and Suhang Wang, “Towards Fair Classifiers Without Sensitive Attributes: Exploring Biases in Related Features”, in Proceedings of 15th ACM International Conference on Web Search and Data Mining (**WSDM 2022**).
- [14] Ahmadreza Mosallanezhad, **Kai Shu**, and Huan Liu, “Generating Topic-Preserving Synthetic News”, in Proceedings of the 2021 IEEE International Conference on Big Data (**IEEE BigData 2021**).
- [15] Yinqiu Huang, Min Gao, Jia Wang, and **Kai Shu**, “DAFD: Domain Adaptation Framework for Fake News Detection”, in Proceedings of the 28th International Conference on Neural Information Processing (**ICONIP 2021**).
- [16] Tharindu Kumarage, Amrita Bhattacharjee, **Kai Shu**, and Huan Liu, “Data Generation for Neural Disinformation Detection”, in proceedings of International Conference on Social Computing, Behavior-Culture Modeling, and Prediction (**SBP-BRiMS 2021**).
- [17] Lu Cheng, Ruocheng Guo, **Kai Shu**, and Huan Liu, “Causal Understanding of Fake News Dissemination on Social Media”, in proceedings of 27th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2021**).
- [18] Enyan Dai, **Kai Shu**, Yiwei Sun, and Suhang Wang, “Labeled Data Generation with Inexact Supervision”, in proceedings of 27th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2021**).
- [19] Yingtong Dou, **Kai Shu**, Congying Xia, Philip Yu, and Lichao Sun, “User Preference-aware Fake News Detection”, in proceedings of 44th International ACM SIGIR Conference on Research and Development in Information (**SIGIR 2021**).
- [20] Xueyao Zhang, Juan Cao, Xirong Li, Qiang Sheng, Lei Zhong, and **Kai Shu**, “Mining Dual Emotion for Fake News Detection”, in proceedings of 30th The Web Conference (**WWW 2021**).
- [21] **Kai Shu**, Yichuan Li, Kaize Ding, and Huan Liu, “Fact-enhanced Synthetic News Generation”, in proceedings of Thirty-Fifth AAAI Conference on Artificial Intelligence (**AAAI 2021**).
- [22] Adaku Uchendu, Thai Le, **Kai Shu** and Dongwon Lee, “Authorship Attribution for Neural Text Generation”, in proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (**EMNLP 2020**).
- [23] Lu Cheng, **Kai Shu**, Siqi Wu, Yasin Silva, Deborah Hall and Huan Liu, “Unsupervised Cyberbullying Detection via Time-Informed Deep Clustering”, in proceedings of the 29th ACM International Conference on Information and Knowledge Management (**CIKM 2020**).
- [24] Kaize Ding, Jianling Wang, Jundong Li, **Kai Shu**, Chenghao Liu and Huan Liu, “Graph Prototypical Networks for Few-shot Learning on Attributed Networks”, in proceedings of the 29th ACM International Conference on Information and Knowledge Management (**CIKM 2020**).

- [25] **Kai Shu**, Guoqing Zheng, Yichuan Li, Subhabrata Mukherjee, Ahmed Hassan Awadallah, Scott Ruston, and Huan Liu, “Leveraging Multi-Source Weak Social Supervision for Early Detection of Fake News”, in proceedings of the 18th European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML-PKDD 2020**)
- [26] Qianru Wang, Bin Guo, Yi Ouyang, **Kai Shu**, Zhiwei Yu, Huan Liu, “Spatial Community-Informed Evolving Graphs for Demand Prediction”, in proceedings of the 18th European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML-PKDD 2020**)
- [27] **Kai Shu**, Subhabrata Mukherjee\*, Guoqing Zheng\*, Ahmed Hassan Awadallah, Milad Shokouhi and Susan Dumais, “Learning with Weak Supervision for Email Intent Detection”, in proceedings of 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR 2020**)
- [28] **Kai Shu**, Liangda Li, Suhang Wang, Yunhong Zhou, and Huan Liu, “Joint Local and Global Sequence Modeling in Temporal Correlation Networks for Trending Topic Detection”, in Proceedings of 12th ACM Web Science Conference (**WebSci 2020**)
- [29] **Kai Shu**, Deepak Mahudeswaran, Suhang Wang, and Huan Liu, “Hierarchical Propagation Networks for Fake News Detection: Investigation and Exploitation”, in Proceedings of 14th the International AAAI Conference on Web and Social Media (**ICWSM 2020**)
- [30] Ghazaleh Beigi, **Kai Shu**, Ruo Cheng Guo, Suhang Wang, Huan Liu “Differentially Privacy Preserving Text Representation Learning”, in Proceedings of the 30th ACM Conference on Hypertext and Social Media (**HT 2019**) (Poster Paper)
- [31] **Kai Shu**, Suhang Wang, Xinyi Zhou, Reza Zafarani, and Huan Liu “The Role of User Profiles for Fake News Detection”, in 2019 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (**ASONAM 2019**)
- [32] Thai Le, **Kai Shu**, Maria D. Molina, Dongwon Lee, S. Shyam Sundar, and Huan Liu “Using Synthetic Clickbaits to Improve Prediction and Distinguish between Bot-Generated and Human-Written Headlines”, in 2019 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (**ASONAM 2019**)  
[Media coverage](#): [Newswise]
- [33] **Kai Shu**, Limeng Cui, Suhang Wang, Dongwon Lee, and Huan Liu, “dEFEND: Explainable Fake News Detection” in the 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2019**)  
[Media coverage](#): [Techxplore][Penn State News]
- [34] Jayashree Subramanian\*, Varun Sridharan\*, **Kai Shu**, and Huan Liu, “Exploiting Emojis for Sarcasm Detection” in the International Conference on Social Computing, Behavior-Culture Modeling, and Prediction (**SBP 2019**).
- [35] Shuo Yang, **Kai Shu**, Suhang Wang, Renjie Gu, Fan Wu, and Huan Liu, “Unsupervised Fake News Detection on Social Media: A Generative Approach”, in the 33rd AAAI Conference on Artificial Intelligence (**AAAI 2019**).
- [36] **Kai Shu**, Suhang Wang, and Huan Liu, “Beyond News Content: The Role of Social Context for Fake News Detection”, in the 12th International Conference on Web Search and Data Mining (**WSDM 2019**).  
[Media coverage](#): [KDNuggets][The Morning Paper]

- [37] Vineeth Rakesh, Suhang Wang, **Kai Shu**, Huan Liu, “Linked Variational AutoEncoders for Inferring Substitutable and Supplementary Items”, in the 12th International Conference on Web Search and Data Mining (**WSDM 2019**).
- [38] **Kai Shu**, Suhang Wang, Thai Le, Dongwon Lee, and Huan Liu, “Deep Headline Generation for Clickbait Detection” in the 2018 IEEE International Conference on Data Mining (**ICDM 2018**)
- [39] Amy Sliva, **Kai Shu**, and Huan Liu, “Using Social Media to Understand Cyber Attack Behavior”, in the 9th International Conference on Applied Human Factors and Ergonomics (**AHFE 2018**)
- [40] **Kai Shu**, Suhang Wang, Jiliang Tang, Yi Chang, Ping Luo, and Huan Liu, “Exploiting User Actions for App Recommendations”, in the 2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (**ASONAM 2018**)
- [41] Wen Zhang, **Kai Shu**, Suhang Wang, Huan Liu, and Yalin Wang, “Multimodal Fusion of Brain Networks with Longitudinal Couplings” in the 21th International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI 2018**)
- [42] Ghazaleh Beigi, **Kai Shu**, Huan Liu, “Securing Social Media User Data - An Adversarial Approach” in the 29th ACM Conference on HyperText and Social Media (**HT 2018**).
- [43] **Kai Shu**, Amy Sliva, Justin Sampson, Huan Liu, “Understanding Cyber Attack Behaviors with Sentiment Information on Social Media”, in the International Conference on Social Computing, Behavior-Culture Modeling, and Prediction (**SBP 2018**).
- [44] Xuying Meng, Suhang Wang, **Kai Shu**, Jundong Li, Bo Chen, Huan Liu, Yujun Zhang, “Personalized Privacy-Preserving Social Recommendation”, in the 32nd AAAI Conference on Artificial Intelligence (**AAAI 2018**).
- [45] **Kai Shu**, Suhang Wang, Jiliang Tang, Yilin Wang, Huan Liu “CrossFire: Cross Media Joint Friend and Item Recommendations” the 11th International Conference on Web Search and Data Mining (**WSDM 2018**).
- [46] Suhang Wang, Yilin Wang, Jiliang Tang, **Kai Shu**, Suhas Ranganath, Huan Liu, “What Your Images Reveal: Exploiting Visual Contents for Point-of-Interest Recommendation”, in the 26th International World Wide Web Conference (**WWW 2017**).
- [47] Ling Jian, Jundong Li, **Kai Shu**, Huan Liu “Multi-Label Informed Feature Selection”, in the 25th International Joint Conference on Artificial Intelligence (**IJCAI 2016**).
- [48] **Kai Shu**, Ping Luo, Li Wan, Peifeng Yin, Linpeng Tang, “Deal or Deceit: Detecting Cheating in Distribution Channels”, in the 23rd ACM International Conference on Information and Knowledge Management (**CIKM 2014**).
- [49] Li Wan, **Kai Shu**, Yu Guo, “Sequences Modeling and Analysis Based on Complex Network”, in the International Conference on Communications and Information Processing (**ICCIP 2012**).
- [50] Qiang Sheng, Juan Cao, H. Russell Bernard, **Kai Shu**, Jintao Li, and Huan Liu, “Characterizing Multi-domain False News and Underlying User Effects on Chinese Weibo”, Information Processing and Management (IPM), Elsevier, 2022.
- [51] Yongchun Zhu, Qiang Sheng, Juan Cao, Qiong Nan, **Kai Shu**, Jindong Wang, Minghui Wu, and Fuzhen Zhuang, “Memory-Guided Multi-View Multi-Domain Fake News Detection”, IEEE Transactions on Knowledge and Data Engineering (TKDE), 2022.

REFEREED  
JOURNAL  
PUBLICATIONS

- [52] **Kai Shu**, “Combating Disinformation on Social Media: A Computational Perspective”, *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, 2022.
- [53] Neville Calleja, Neetu Abad, AbdelHalim AbdAllah, Naglaa Ahmed, Dolores Albarracin, Elena Altieri, Julienne N Anoko, Ruben Arcos, Arina Anis Azlan, Judit Bayer, Anja Bechmann, Supriya Bezbaruah, Sylvie C Briand, Ian Brooks, Lucie M Bucci, Stefano Burzo, Christine Czerniak, Manlio De Domenico, Adam G Dunn, Ulrich K H Ecker, Laura Espinosa, Camille Francois, Kacper Gradon, Anatolij Gruzd, Beste Sultan Gülgün, Rustam Haydarov, Cherstyn Hurley, Santi Indra Astuti, Atsuyoshi Ishizumi, Neil Johnson, Dylan Johnson Restrepo, Masato Kajimoto, Aybüke Koyuncu, Shibani Kulkarni, Jaya Lamichhane, Rosamund Lewis, Avichal Mahajan, Ahmed Mandil, Erin Mcaweeney, Melanie Messer, Wesley Moy, Patricia Ndumbi Ngamala, Tim Nguyen, Mark Nunn, Saad B Omer, Claudia Pagliari, Palak Patel, Lynette Phuong, Dimitri Prybylski, Arash Rashidian, Emily Rempel, Sara Rubinelli, PierLuigi Sacco, Anton Schneider, **Kai Shu**, Melanie Smith, Harry Sufehmi, Viroj Tangcharoen-sathien, Robert Terry, Naveen Thacker, Tom Trewinnard, Shannon Turner, Heidi Tworek, Saad Uakkas, Emily Vraga, Claire Wardle, Herman Wasserman, Elisabeth Wilhelm, Andrea Würz, Brian Yau, Lei Zhou, Tina D Purnat, “A public health research agenda for managing infodemics: Methods and results of the first WHO infodemiology conference”, *JMIR Infodemiology*, 2021.
- [54] Kaize Ding, **Kai Shu**, Xuan Shan, Jundong Li, and Huan Liu, “Cross-domain Anomaly Detection on Attributed Networks.”, *IEEE Transactions on Neural Networks and Learning Systems*, 2021.
- [55] Chenguang Song, **Kai Shu**, and Bin Wu, “Temporally Evolving Graph Neural Network for Fake News Detection”, *Information Processing and Management (IPM)*, Elsevier, 2021.
- [56] Amrita Bhattacharjee, **Kai Shu**, Min Gao, Huan Liu, “Disinformation in the Online Information Ecosystem: Detection, Mitigation and Challenges”, *Journal of Computer Research and Development*, 2021
- [57] Wen Zhang, Brittany Blair Braden, Gustavo Miranda, **Kai Shu**, Suhang Wang, Huan Liu, and Yalin Wang, “Integrating Multimodal and Longitudinal Neuroimaging Data with Multi-Source Network Representation Learning”, *Neuroinformatics*, 2021.
- [58] **Kai Shu**, Amrita Bhattacharjee, Faisal Alatawi, Tahora H. Nazer, Kaize Ding, Mansooreh Karami, and Huan Liu, “Detecting and Mitigating Disinformation in a Social Media Age”, in *WIREs Data Mining and Knowledge Discovery*, 2020
- [59] **Kai Shu**, Ahmed Hassan Awadallah, Susan Dumais, and Huan Liu, “Detecting Fake News with Weak Social Supervision”, in **IEEE Intelligent Systems Media coverage**: [Venturebeat] [Digital Information World] [Report Door].
- [60] **Kai Shu**, Deepak Mahudeswaran, Suhang Wang, Dongwon Lee, Huan Liu “FakeNews-Net: A Data Repository with News Content, Social Context and Dynamic Information for Studying Fake News on Social Media”, in **Journal of Big Data, Mary Ann Liebert, Inc. Publishers**
- [61] Qun Zhao, Yuelong Zhu, **Kai Shu**, Dingsheng Wan, Yufeng Yu, Xudong Zhou, and Huan Liu, “Joint Spatial and Temporal Modeling for Hydrological Prediction”, in **IEEE Access 2020**
- [62] Ping Luo, **Kai Shu**, Junjie Wu, Li Wan, and Yong Tan, “Exploring Correlation Network for Cheating Detection”, in **ACM TIST 2019**

- [63] **Kai Shu**, Deepak Mahudeswaran, and Huan Liu, “FakeNewsTracker: A Tool for Fake News Collection, Detection, and Visualization” in the Computational and Mathematical Organization Theory (**CMOT 2018**) (**Best of SBP**)
- [64] Xuying Meng, Suhang Wang, **Kai Shu**, Jundong Li, Bo Chen, Huan Liu, and Yujun Zhang “Towards Privacy Preserving Social Recommendation under Personalized Privacy Settings” **World Wide Web Journal**, 2018
- [65] **Kai Shu**, Amy Sliva, Suhang Wang, Jiliang Tang, Huan Liu “Fake News Detection on Social Media: A Data Mining Perspective”, in **SIGKDD explorations 2017**.  
[Included in the curriculum at:](#) [Worcester Polytechnic Institute], [The Hang Seng University of Hong Kong]  
[Media coverage:](#) [KDnuggets] [ASLIFacebook] [Data Skeptic] [A Chinese Blog] [Another Chinese Blog] [A Korean Blog] [Wikipedia] [Hackernoon]
- [66] **Kai Shu**, Suhang Wang, Jiliang Tang, Reza Zafarani, Huan Liu, “User Identity Linkage across Online Social Networks”, in **SIGKDD explorations 2016**.

PATENT  
APPLICATIONS

- [67] **Kai Shu**, Subhabrata Mukherjee, Guoqing Zheng, Ahmed Hassan Awadallah, Milad Shokouhi, and Susan Dumais “Joint Learning from Explicit and Inferred Labels”, 2020, US Patent App, 16/876,931
- [68] **Kai Shu**, Deepak Mahudeswaran, Huan Liu “Method and Apparatus for Collecting, Detecting and Visualizing Fake News”, 2018. US Patent App, 62/904,558
- [69] **Kai Shu**, Suhang Wang, Jiliang Tang, Yilin Wang, Huan Liu “Systems and Methods for A Cross Media Joint Friend and Item Recommendation Framework”, 2018. Provisional Patent Application

WORKSHOP AND  
DEMO PAPERS

- [70] Ebrahim Bagheri, Huan Liu, **Kai Shu**, Fattane Zarrinkalam, “Foreword to the special issue on dis/misinformation mining from social media”, in Information Processing and Management (IPM) 2021.
- [71] Michele Coscia, Alfredo Cuzzocrea, and **Kai Shu**, “Advances in Social Network Analysis and Mining in the Big Data Era: Overview of the IEEE/ACM ASONAM 2021 International Conference”, in **ASONAM 2021**.
- [72] Zhao Wang, **Kai Shu**, and Aron Culotta, “Enhancing Model Robustness and Fairness with Causality: A Regularization Approach”, in **EMNLP 2021**.
- [73] Aude Hoefftner, Meng Jiang, Srijan Kumar, Neil Shah, and **Kai Shu**, “The Second International MIS2 Workshop: Misinformation and Misbehavior Mining on the Web”, in **KDD 2021**.
- [74] Miyoung Chong, Thomas J. Froehlich, and **Kai Shu**, “Racial Attacks during the COVID-19 Pandemic: Politicizing an Epidemic Crisis on Longstanding Racism and Misinformation, Disinformation, and Misconception”, in **ASIS&T 2021**
- [75] Yichuan Li, Bohan Jiang, **Kai Shu**, and Huan Liu, “Toward A Multilingual and Multimodal Data Repository for COVID-19 Disinformation”, in **IEEE BigData 2020**
- [76] Kaize Ding, **Kai Shu**, Yichuan Li, Amrita Bhattacharjee, and Huan Liu, “Challenges in Combating COVID-19 Infodemic - Data, Tools, and Ethics”, in **ACM CIKM 2020**.

[77] Limeng Cui, **Kai Shu**, Suhang Wang, Dongwon Lee, Huan Liu, “dDEFEND: An Explainable Fake News Detection System”, in **ACM CIKM 2019**.

[78] **Kai Shu**, Suhang Wang, Huan Liu, “Understanding User Profiles on Social Media for Fake News Detection”, in **FakeMM 2018**.

## MENTORING EXPERIENCE

### Ph.D. Students

- Canyu Chen, Ph.D., Fall 2021, in progress.
- Yueqing Liang, Ph.D., Spring 2022, in progress.
- Xiong Xiao Xu, Ph.D., Spring 2022, in progress.

*The following Ph.D. students are supervised before joining IIT*

- Ahmadreza Mosallanezhad, CSE@Arizona State Univ. Sep. 2019 – May 2022  
Research Topic: Neural Text Generation  
Research co-advised with Prof. Huan Liu
- Kaize Ding, CSE@Arizona State Univ. May. 2019 – May 2022  
Research Topic: Cross-domain Anomaly Detection  
Research Papers: [54]  
Research co-advised with Prof. Huan Liu
- Lu Cheng, CSE@Arizona State Univ. March 2019 – April. 2022  
Research Topic: Unsupervised Cyberbullying Detection  
Research Papers: [23]  
Research co-advised with Prof. Huan Liu
- Thai Le, CSE@Penn State Univ. Oct. 2018 – July. 2019  
Research topic: clickbait generation and detection  
Research Papers: [32]  
Research co-advised with Prof. Dongwon Lee
- Chuan Guo, CSE@ Univ. of Chinese Academy of Sciences Jan. 2019 – March 2020  
Research Topic: Emotion-based Fake News Detection, [20]  
Research co-advised with Prof. Juan Cao
- Qiang Sheng, CSE@ Univ. of Chinese Academy of Sciences Jan. 2019 – Jan. 2022  
Research Topic: Topic-oriented False News Analysis  
Research co-advised with Prof. Juan Cao

### Master Students

- Kayenat Patil, Spring 2022, in progress
- Arika (Ka Yin) Ho, IIT → Facebook Fall 2020 - Spring 2021

*The following Ph.D. students are supervised before joining IIT*

- Deepak Mahudeswaran, CSE@Arizona State Univ. Sep. 2017 – Aug. 2020  
Research Topic: Fake News Detection and Mitigation  
Research Papers: [63], [60]



- Jayashree Subramanian, CSE@Arizona State Univ. Feb. 2019 – Jan. 2020  
Reseach Topic: Sarcasm Detection on Social Media  
Research Papers: [34]
- Varun Sridharan, CSE@Arizona State Univ. Feb. 2019 – Jan. 2020  
Reseach Topic: Sarcasm Detection on Social Media  
Research Papers: [34]

### Undergraduate Students

- Ayman Shuaibi, Spring 2022 - Summer 2022
- Truong Pham, IIT → PhD student at UT Dallas Spring 2021 - Summer 2021
- Pratik Patel, IIT → Microsoft Fall 2021 - Spring 2022

### Ph.D. Dissertation Committee

- Walaa Abdulaziz M Alnasser (CS @ ASU)
- Lei Fan (Business @ Illinois Tech)
- Hao Shen (Business @ Illinois Tech)
- Tian Tian (Business @ Illinois Tech)
- Ping Liu (CS @ Illinois Tech)
- Udayan Das (CS @ Illinois Tech)
- Daniel Giles (Physics @ Illinois Tech)

### TEACHING EXPERIENCES

- **Instructor**  
CS 585: Natural Language Processing, IIT Fall'2022
- **Instructor**  
CS 579: Online Social Network Analysis, IIT Spring'2022
- **Instructor**  
CS 595: Advanced Topics in Social Media Analytics, IIT Fall'2021
- **Instructor**  
CS 579: Online Social Network Analysis, IIT Fall'2020
- **Co-Instructor & Teaching Assistant**  
CSE 472: Social Media Mining, ASU Fall'2019  
Instructor: Professor Huan Liu
- **Teaching Assistant**  
CSE 472: Social Media Mining, ASU Fall'2018  
Instructor: Professor Huan Liu
- **Teaching Assistant**  
CSE 572: Data Mining, ASU Spring'2016  
Instructor: Prof. Frank Calliss
- **Teaching Assistant**  
CSE Applied Cryptography, ASU Fall'2015  
Instructor: Prof. Rida Bazzi

## RESEARCH GRANTS

- Explainable Artificial Intelligence with Fairness and Privacy
  - Role: PI (Co-PI Yuan Hong)
  - Cisco Research Award
  - 5/1/2022 to 4/30/2023
- Enabling Intelligent Marketing Decision-Making of Heavy Machinery Products with AI
  - Role: Sole PI
  - XCMG American Research Corporation
  - 3/1/2022 to 2/29/2024
- Deep Learning with Fairness and Explainability
  - Role: Sole PI
  - Google Cloud Research Credits Award
  - 11/15/2021 to 11/14/2022
- Research Project Development in Type 2 Diabetes
  - Role: Co-PI (PI: Ali Cinar)
  - Illinois Tech Research Seed Grant
  - 10/1/2021 to 9/30/2022
- Addressing the Type 2 Diabetes Epidemic: Detection, Classification and Assessment of Personalized Treatment Alternatives with AI
  - Role: Co-Investigator
  - Discovery Partners Institute (DPI) Seed Grant
  - 10/1/2021 to 9/30/2022
- SHF:Small:Intelligent Management of Hybrid Workloads for Extreme Scale Computing
  - Role: Co-PI (PI: Zhiling Lan)
  - National Science Foundation
  - 10/1/2021 to 9/30/2024
- GWU IDDP Research Fellowship Award
  - Role: Sole PI
  - The George Washington University (GWU)
  - 1/1/2021 to 12/31/2021

## SELECTED MEDIA COVERAGES

- IIT News (2021): Computer Science Professor to Apply Artificial Intelligence Techniques to Help Diagnose Diabetes Patients
- GW Today, (2021): Q & A: IDDP Fellow Kai Shu
- Penn State News (2021): Researchers test detection methods for AI-generated content
- IIT News (2021): Computer Science Professor to Expand Award-Winning Fake News Research
- Brookings (2021): How to deal with AI-enabled disinformation
- ASU Knowledge Enterprise (2020): An algorithm to detect fake news
- Venturebeat (2020): AI tools could improve fake news detection by analyzing users' interactions and comments
- Analyticsindiamag (2020): How Microsoft Set A New Benchmark To Track Fake News
- Venturebeat (2020): Microsoft claims its AI framework spots fake news better than state-of-the-art baselines
- Analyticsindiamag (2020): Top ML Projects To Fight Fake News Fatigue During COVID-19
- Arizona PBS Cronkite News (2019): Fires in the Amazon: Arizona researchers determine

what's true, what's not

- Penn State News (2019): What makes a piece of news fake?
- Datanami (2019): AI Squares Off Against Fake News
- Newswise (2019): Clickbait Secrets Exposed! Humans and AI team up to improve clickbait detection
- Psychology Today (2019): What is Fake News? Is Debate Worth the Effort?
- The Morning Paper (2019): Beyond news contents: the role of social context for fake news detection
- ASU Full Cycle (2019): Students' Fresh Perspectives Lead ASU Researcher to Success.
- ASU News/Co Lab blog (2019): Can AI help discern fact from fake on social media?
- Data Skeptic (2018): Algorithmic Detection of Fake News
- ASU Now (2018): The data defenders
- KD Nuggets (2017): A Quick Guide to Fake News Detection on Social Media

SELECTED  
PROFESSIONAL  
TALKS

- "Some Challenges on Combating Disinformation on Social Media", invited talk at the University of Chicago. Dec. 21
- "Learning with Weak Social Supervision for Disinformation Detection", distinguish talk at IGDTUW, India, Jan., 2021
- "Learning with Weak Social Supervision for Disinformation Detection", China University of Petroleum - Huadong, Dec., 2020
- "Learning with Weak Social Supervision for Disinformation Detection", Hohai University, Nov., 2020
- "Understanding Disinformation: Learning with Weak Social Supervision", Pinterest ML Lunch talk, Aug., 2020
- "Challenges in Combating COVID-19 Infodemic", invited talk at the first WHO Infodemiology Conference, July, 2020
- "Some Lessons Learned in Detecting and Explaining Fake News on Social Media", keynote talk at the workshop on data science for Fake News, co-presented remotely, May, 2020.
- "Learning with Weak Supervision from User Interactions", invited talk at Microsoft Research AI Power Lunch talk series, August, 2019.
- "dEFEND: Explainable Fake News Detection", invited talk at KDD workshop on "Truth Discovery and Fact Checking: Theory and Practice", August, 2019.
- "Beyond News Contents: The Role of Social Context for Fake News Detection", invited talk at Microsoft Research AI Power Lunch talk series, June, 2019.
- "Detecting Fake News on Social Media", invited talk at News Co/Lab at ASU, June, 2019.
- "Fake News: Fundamental Theories, Detection Strategies and Challenges.", tutorial in the 12th International Conference on Web Search and Data Mining (WSDM 2019)
- "Fake News on Social Media: Characterization and Detection", Second International Workshop on Artificial Intelligence and Optimization (WAI018), remote participation via video conferencing, Chiapas, Mexico. November 8, 2018
- "FakeNewsTracker: A Tools for Fake News Collection, Detection and Visualization", Global Engagement Center (GEC)'s Tech Innovation Program, the US Department of State. December 20, 2018
- "Fake News on Social Media: Characterization and Detection", Institute of Computing Technology, Chinese Academy of Sciences, remote participation via video conference. January 3, 2019

PROFESSIONAL  
SERVICES

**Editors**

- Book editor, Fake News, Disinformation, and Misinformation, Springer, 2019
- Guest co-editor, Special Section on Fusion of Deep Learning Methodologies and Applications for Fake News on Social Media, IEEE Access, 2019

### **Book/Book Proposal Review**

- CRC Press/Taylor and Francis
- Springer

### **Panel and Review for Funding Agencies**

- Air Force Office of Scientific Research (AFOSR) (2021)
- NSF (2021)
- Swiss NSF (2021)

### **Chairs, Organizers, and Panels**

- Keynote speaker, The 10th International Workshop on Natural Language Processing for Social Media (SocialNLP), Collocated with TheWebConf'22
- Panelist, College of Computing, Illinois Tech.
- Co-organizer, Second Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situations (CONSTRAINT 2022), Collocated with ACL 2022.
- Associate Editor, Frontiers in Computer Science
- Associate Editor, Frontiers in Public Health
- Co-organizer, Second International MIS2 Workshop: Misinformation and Misbehavior Mining on the Web (MIS2 2021), collocated with The ACM KDD 2021.
- PC Chair, ASONAM 2021.
- Keynote speaker, The 10th International Workshop on Natural Language Processing for Social Media (SocialNLP), Collocated with TheWebConf'22 Co-organizer, Second Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situations (CONSTRAINT 2022), Collocated with ACL 2022. Associate Editor, Frontiers in Computer Science Associate Editor, Frontiers in Public Health, Technology and Social Justice Series on AI Bias and Fairness.
- Co-organizer, The WebConf 2021. The First International Workshop on News Recommendation and Intelligence (MIND 2020).
- PC Chairs, ICWSM 2021 Data Challenge.
- Steering Committee, the First Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situation (CONSTRAINT), Collocated with AAAI 2021.
- Organizer, Springer Social Network Analysis and Mining (SNAM) - Special Issue on Tackling COVID-19 Infodemic.
- Panelist, the First Global WHO Infodemiology Conference, July, 2020.
- Panelist, Online Safety Panel in ICWSM Data Challenge, June 8th, 2020
- SIAM SDM Workshop on FEND Publicity Chair, 2019
- Co-organizer, ACM CIKM, The 5th International Workshop on Mining Actionable Insights from Social Networks (MAISoN 2020)

### **Program Committees (Selected)**

- The 15th ACM international Conference on Web Search and Data Mining (WSDM'22)
- The 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP'21)
- 30th ACM International Conference on Information and Knowledge Management (CIKM'21)
- ACM Web Science Conference (WebSci'21)
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD' 21)
- The 59th Annual Meeting of the Association for Computational Linguistics (ACL'21)
- The 43rd European Conference on Information Retrieval (ECIR'21)
- The Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI'21)
- SIAM International Conference on Data Mining (SDM), 2021
- TheWebConf, 2020
- ACM International Conference on Web Search and Data Mining (WSDM), 2020
- The 12th International ACM Conference on Web Science (WebSci'20)
- The 14th IEEE International Conference on Semantic Computing (ICSC 2020)
- The Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI'20)

- 2019 IEEE International Conference on Cognitive Machine Intelligence (CogMI'19)
- 28th International Conference on Artificial Neural Networks (ICANN'19)
- The IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 2019, 2020
- SIGIR workshop on Reducing Online Misinformation Exposure (ROME'19)
- International AAAI Conference on Web and Social Media (ICWSM), 2019
- IEEE International Conference on Big Data (BigData), 2016, 2017, 2018

#### **Journal Reviewers** (Selected)

- Proceedings of the National Academy of Sciences of the United States of America (PNAS)
- Frontiers in Big Data
- Policy Sciences
- Concurrency and Computation: Practice and Experience
- Frontiers in Psychology
- ACM/IMS Transactions on Data Science
- Electronic Commerce Research and Applications
- Journal of Information Security and Applications
- Computer
- ACM Transactions on Knowledge Discovery from Data (TKDD)
- Knowledge and Information Systems (KAIS)
- ACM Transactions on the Web (TWEB)
- Frontiers
- ACM Computing Survey
- SAGE Open
- Springer Nature Applied Science (SNAS)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- ACM Transactions on Intelligent Systems and Technology (TIST)
- Neurocomputing (NEUCOM)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- Natural Language Engineering (NLG)
- Computers & Security (COSE)
- World Wide Web Journal (WWWJ)
- Journal of Computational Science (JOCS)

#### **Conference Reviewers**

- TheWebConf, 2019
- ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), 2018
- International AAAI Conference on Web and Social Media (ICWSM), 2016, 2018
- Pacific Asia Knowledge Discovery and Data Mining (PAKDD), 2018
- AAAI Conference on Artificial Intelligence (AAAI), 2018
- ACM International Conference on Conference on Information and Knowledge Management (CIKM), 2017
- ACM International Conference on Web Search and Data Mining (WSDM), 2017, 2019
- IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 2016, 2017, 2018
- ACM Conference on Recommender Systems (RecSys), 2016
- International Joint Conferences on Artificial Intelligence (IJCAI), 2016