Shen Yan

Address	University of Southern California, Los Angeles, CA	**Phone**	+1(213)709-1755
Website	https://yanshentracy.github.io/page/	**Email**	shenyan@usc.edu

Education

2017-   **University of Southern California**   **Los Angeles, CA**

Ph.D. candidate in Computer Science

Information Sciences Institute

Machine Intelligence and Data Science (MINDS) research group

Advisor: Emilio Ferrara

2014-2017   **University of Chinese Academy of Sciences**   **Beijing, China**

M.S. in Computer Science

Institute of Information Engineering, Chinese Academy of Sciences

Thesis: *Differential Privacy Based Privacy-Preserving Mechanisms in Online Social Networks*

2010-2014   **Hebei University of Technology**   **Tianjin, China**

B.E. in Electronic Information Engineering

Work Experience

Facebook Research - Core Data Science   **Menlo Park, CA**

Research Intern   *May 2021 - Aug. 2021*

Mentor: Kristen Altenburger

Current Research Projects

Fair Machine Learning for Multimodal Human Behavior Understanding   **Los Angeles, CA**

Research Assistant   *Aug. 2019 - Present*

- Analyzing the heterogeneous patterns of multimodal human behavior data.

- Developing machine learning models that will identify, account for, and mitigate the biases of multimodal human behavior modeling methods.

IARPA MOSAIC: Tracking Individual Performance with Sensors (TILES)   **Los Angeles, CA**

Research Assistant   *Jan. 2018 - Present*

- Understanding how individual differences, mental states, and well-being affect job performance by collecting physical information through the use of wearable sensors, environmental information through the use of environmental sensors, and behavioral information through the use of surveys.

- Core member of the modeling team, in charge of building predictive models.

Publications

- **S. Yan**, H.-T. Kao, S. Narayanan, K. Lerman, and E. Ferrara , **" Mitigating the Bias of Heterogeneous Human Behavior in Affective Computing,"** in proc. 9th International Conference on Affective Computing & Intelligent Interaction (ACII 2021), Sept. 2020.

- H.-T. Kao, **S. Yan**, H. Hosseinmardi, S. Narayanan, K. Lerman, and E. Ferrara , **"User-based collaborative filtering mobile health system,"** *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, vol. 4(4), pp. 1-17, Dec. 2020.

- **S. Yan**, H.-T. Kao, and E. Ferrara , **"Fair class balancing: Enhancing model fairness without observing sensitive attributes,"** in proc. 29th ACM International Conference on Information and Knowledge Management (CIKM'20), pp. 1715-1724, Oct. 2020.

- **S. Yan**, D. Huang, M. Soleymani, **"Mitigating biases in multimodal personality assessment,"** in proc. 22nd ACM International Conference on Multimodal Interaction (ICMI'20), pp. 361-369, Oct. 2020.

- J. Jiang, E. Chen, **S. Yan**, K. Lerman, and E. Ferrara, **"Political polarization drives online conversations about COVID-19 in the United States,"** *Human Behavior and Emerging Technologies,* vol. 2, pp. 200-211, July 2020.

- **S. Yan**, H. Hosseinmardi, H.-T. Kao, S. Narayanan, K. Lerman, and E. Ferrara , **"Estimating affects with wearable sensors,"** *Journal of Healthcare Informatics Research*, Springer, pp. 1-34, Mar. 2020.

- **S. Yan**, H. Hosseinmardi, H.-T Kao, S. Narayanan, K. Lerman, and E. Ferrara, **"Estimating individualized daily self-reported affect with wearable sensors,"** in proc. 7th IEEE International Conference on Healthcare Informatics (ICHI'19), pp. 1-9, June 2019.

- **S. Yan**, **"Modeling behavioral traits and well-being using human biosignals: Challenges and methods,"** in proc. 7th IEEE International Conference on Healthcare Informatics (ICHI'19), pp. 1-2, June 2019.

- H.-T Kao, **S. Yan**, D. Huang, N. Bartley, H. Hosseinmardi, and E. Ferrara, **"Understanding cyberbullying on Instagram and Ask.fm via social role detection,"** in proc. 4th Workshop on Computational Methods in Online Misbehavior Co-located with The Web Conference (CyberSafety'19), pp. 183-188, May 2019.

- H.-T. Kao, H. Hosseinmardi, **S. Yan**, M. Hasan, S. Narayanan, K. Lerman, and E. Ferrara, **"Discovering latent psychological structures from self-report assessments of hospital workers,"** in proc. 2018 5th International Conference on Behavioral, Economic, and Socio-Cultural Computing (BESC'18), pp. 156-161, Nov. 2018.

- A. Deb, A. Majmundar, S. Seo, A. Matsui, R. Tandon, **S. Yan**, J. Allem, and E. Ferrara, **"Social bots for online public health interventions,"** in proc. The 2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM'18), pp. 186-189, Aug. 2018.

- M. Wang, W.-T. Zhu, **S. Yan**, Q. Wang, **"SoundAuth: Secure zero-effort two-factor authentication based on audio signals,"** in proc. 6th IEEE Conference on Communications and Network Security (CNS'18), pp. 1-9, May 2018.

- **S. Yan**, S. Pan, W.-T. Zhu, and K. Chen, **"DynaEgo: Privacy-preserving collaborative filtering recommender system based on social-aware differential privacy,"** in K. Y. Lam, C. H. Chi, and S. Qing (Eds.): 18th International Conference on Information and Communications Security (ICICS'16), *Lecture Notes in Computer Science*, vol. 9977, pp. 347–357, Nov. 2016.

- L. Yang, F. Fang, X. Lu, W. T. Zhu, Q. Wang, **S. Yan**, and S. Pan, "**A secure and fast dispersal storage scheme based on the learning with errors problem,**" in proc. 12th EAI International Conference on Security and Privacy in Communication Networks (SecureComm'16), pp. 392–411, Oct. 2016.

- **S. Yan**, S. Pan, Y. Zhao, and W.-T. Zhu, **"Towards privacy-preserving data mining in online social networks: Distance-grained and item-grained differential privacy,"** in J. K. Liu and R. Steinfeld (Eds.): 21st Australasian Conference on Information Security and Privacy (ACISP'16), Part I, *Lecture Notes in Computer Science*, vol. 9722, pp. 141–157, July 2016.

- S. Pan, **S. Yan**, and W.-T. Zhu, **"Security analysis on privacy-preserving cloud aided biometric identification schemes,"** in J. K. Liu and R. Steinfeld (Eds.): 21st Australasian Conference on Information Security and Privacy (ACISP'16), Part II, *Lecture Notes in Computer Science*, vol. 9723, pp. 446–453, July 2016.

Working Papers

- **S. Yan** and E. Ferrara, **"Mitigating the Model and Label Bias in Behavioral Modeling,"**. Working paper.

- H.-T. Kao, **S. Yan**, K. Lerman, and E. Ferrara, **"Disparate Representation in Algorithmic Fairness,"**. Working paper.

Services

Program Committee

ACM Conference on Web Science (WebSci)	2020 - 2021

Reviewers

International World Wide Web Conference (WWW)	2019 - 2021
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)	2020
International Conference on Data Mining (ICDM)	2019
International Conference on Advances in Social Networks Analysis and Mining (ASONAM)	2019
International AAAI Conference on Web and Social Media (ICWSM)	2019

Teaching Experience

Teaching Assistantship

CSCI 103, Introduction to Programming	Fall 2017
CSCI 102, Fundamentals of Computation	Spring 2018, Fall 2020, Spring 2021

Mentorship

Yiyun Zhu (USC undergraduate research intern)
Xinyi Peng (USC graduate research intern)

Selected Awards & Grants

ACM SIGIR Student Travel Grant	2020
NSF Student Travel Grant	2019
Distinguished Research on Digital Humanities Award on BESC conference	2018
Best Undergraduate Thesis	2014