

Yuchen Zhao

Lecturer in Computer Science

Education

- 2013–2017 **Ph.D., Computer Science**, University of St Andrews, St Andrews, UK
2011–2013 **M.Sc., Information Security**, Wuhan University, Wuhan, China
2007–2011 **B.Eng., Information Security**, Huazhong University of Science and Technology, Wuhan, China

Appointments

- 09/2022– **Lecturer**, Department of Computer Science, University of York, York, UK
10/2019– **Research Associate**, Dyson School of Design Engineering, Imperial College London, London, UK
09/2022
07/2018– **Research Fellow**, School of Electronics and Computer Science, University of Southampton, Southampton, UK
10/2019
07/2017– **Research Fellow**, Cyber Security Centre, De Montfort University, Leicester, UK
06/2018

Publications

- [1] Y. Huang, Y. Zhao, A. Capstick, F. Palermo, H. Haddadi, and P. Barnaghi. Analyzing Entropy Features in Time-Series Data for Pattern Recognition in Neurological Conditions. *Artificial Intelligence in Medicine*, page 102821, 2024. <https://doi.org/10.1016/j.artmed.2024.102821>.
- [2] C. Adams, M. Eslamnejad, A. Khadka, A. M'manga, H. Shaw, and Y. Zhao. Auditing AI Systems: A Metadata Approach. In M. Bramer and F. Stahl, editors, *Artificial Intelligence XL*, Lecture Notes in Computer Science, pages 241–246, Cham, 2023. Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-47994-6_22.
- [3] M. Niu, Y. Zhao, and H. Haddadi. (Poster) Effective Abnormal Activity Detection on Multivariate Time Series Healthcare Data. In *Proceedings of the 29th Annual International Conference on Mobile Computing and Networking*, Madrid, Spain, Oct. 2023. <https://doi.org/10.1145/3570361.3615741>.
- [4] Y. Huang, Y. Zhao, A. Capstick, F. Palermo, H. Haddadi, and P. Barnaghi. (Preprint) Information Theory Inspired Pattern Analysis for Time-series Data, 2023. Online at <https://arxiv.org/abs/2302.11654>.
- [5] S. Hadjixenophontos, A. M. Mandalari, Y. Zhao, and H. Haddadi. Prism: Privacy preserving healthcare internet of things security management. In *Proceedings of the 2023 IEEE Symposium on Computers and Communications*, pages 919–924, Gammarth, Tunisia, July 2023. <https://doi.org/10.1109/ISCC58397.2023.10218268>.
- [6] Y. Huang, Y. Zhao, H. Haddadi, and P. Barnaghi. Using Entropy Measures for Monitoring the Evolution of Activity Patterns. In *Proceedings of the 2022 IEEE World Forum on Internet of Things*, pages 1–6, Yokohama, Japan, Oct. 2022. <https://doi.org/10.1109/WF-IoT54382.2022.10152050>.
- [7] Y. Zhao, P. Barnaghi, and H. Haddadi. Multimodal Federated Learning on IoT Data. In *Proceedings of the 2022 IEEE/ACM 7th International Conference on Internet-of-Things Design and Implementation*, IoTDI '22, pages 43–54, Milan, Italy, May 2022. <https://doi.org/10.1109/IoTDI54339.2022.00011>.
- [8] Y. Zhao, S. S. Afzal, W. Akbar, O. Rodriguez, F. Mo, D. Boyle, F. Adib, and H. Haddadi. Towards Battery-Free Machine Learning and Inference in Underwater Environments. In *Proceedings of the 23rd*

Annual International Workshop on Mobile Computing Systems and Applications, HotMobile '22, page 29–34, Tempe, Arizona, Mar. 2022. <https://doi.org/10.1145/3508396.3512877>.

- [9] Y. Zhao, H. Liu, H. Li, P. Barnaghi, and H. Haddadi. (Preprint) Semi-supervised Federated Learning for Activity Recognition, 2021. arXiv:2011.00851, Online at <https://arxiv.org/abs/2011.00851>.
- [10] F. Palermo, H. Li, A. Capstick, N. Fletcher-Lloyd, Y. Zhao, S. Kouchaki, R. Nilforooshan, D. Sharp, and P. Barnaghi. (Poster) Designing A Clinically Applicable Deep Recurrent Model to Identify Neuropsychiatric Symptoms in People Living with Dementia Using In-Home Monitoring Data. In *NeurIPS '21 Workshop - Bridging the Gap: From Machine Learning Research to Clinical Practice*, 2021. arXiv:2110.09868, Online at <https://arxiv.org/abs/2110.09868>.
- [11] Y. Zhao, H. Haddadi, S. Skillman, S. Enshaeifar, and P. Barnaghi. Privacy-Preserving Activity and Health Monitoring on Databox. In *Proceedings of the Third ACM International Workshop on Edge Systems, Analytics and Networking*, EdgeSys '20, pages 49–54, Heraklion, Greece, Apr. 2020. <https://doi.org/10.1145/3378679.3394529>.
- [12] Y. Zhao and I. Wagner. Using Metrics Suites to Improve the Measurement of Privacy in Graphs. *IEEE Transactions on Dependable and Secure Computing (TDSC)*, 19(1):259–274, Jan. 2022. (first published on 13 Mar 2020), <https://doi.org/10.1109/TDSC.2020.2980271>.
- [13] T. Blount, L. Koesten, Y. Zhao, and E. Simperl. Understanding the Use of Narrative Patterns by Novice Data Storytellers. In *Proceedings of the 4th International Conference on Computer-Human Interaction Research and Applications*, pages 128–138, 2020. <https://doi.org/10.5220/0010121601280138>.
- [14] Y. Zhao, T. Blount, L. Koesten, and E. Simperl. Structured and Uncertainty-Aware Data Storytelling. In *CHI '19 Workshop on HCI for Accurate, Impartial and Transparent Journalism: Challenges and Solutions*, Glasgow, UK, May 2019. Online at <https://bit.ly/3bSkuVh>.
- [15] Y. Zhao and I. Wagner. On the Strength of Privacy Metrics for Vehicular Communication. *IEEE Transactions on Mobile Computing (TMC)*, 18(2):390–403, Feb. 2019. (first published on 03 May 2018), <https://doi.org/10.1109/TMC.2018.2830359>.
- [16] Y. Zhao and I. Wagner. Poster: Evaluating Privacy Metrics for Graph Anonymization and De-Anonymization. In *Proceedings of the 2018 Asia Conference on Computer and Communications Security*, ASIACCS '18, pages 817–819, Incheon, Republic of Korea, 2018. <https://doi.org/10.1145/3196494.3201586>.
- [17] Y. Zhao. *Recommending Privacy Preferences in Location-sharing Services*. PhD thesis, University of St Andrews, June 2017.
- [18] Y. Zhao, J. Ye, and T. Henderson. A Robust Reputation-Based Location-Privacy Recommender System Using Opportunistic Networks. In *Proceedings of the 8th EAI International Conference on Mobile Computing, Applications and Services*, MobiCASE'16, pages 62–73, Cambridge, Great Britain, 2016. <https://doi.org/10.4108/eai.30-11-2016.2267031>.
- [19] Y. Zhao, J. Ye, and T. Henderson. The Effect of Privacy Concerns on Privacy Recommenders. In *Proceedings of the 21st International Conference on Intelligent User Interfaces*, IUI '16, pages 218–227, Sonoma, California, USA, Mar. 2016. <https://doi.org/10.1145/2856767.2856771>.
- [20] Y. Zhao. Usable Privacy in Location-Sharing Services. In *Companion Publication of the 21st International Conference on Intelligent User Interfaces*, IUI '16 Companion, pages 110–113, Sonoma, California, USA, Mar. 2016. <https://doi.org/10.1145/2876456.2876458>.
- [21] Y. Zhao, J. Ye, and T. Henderson. Privacy-Aware Location Privacy Preference Recommendations. In *Proceedings of the 11th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services*, MOBIQUITOUS '14, pages 120–129, London, United Kingdom, Dec. 2014. <https://doi.org/10.4108/icst.mobiquitous.2014.258017>.
- [22] Y. Zhao, J. Ye, and T. Henderson. (Poster) Recommending Location Privacy Preferences in Ubiquitous Computing. In *Proceedings of the 7th ACM Conference on Security and Privacy in Wireless and Mobile Networks*, WiSec '14, Oxford, United Kingdom, July 2014. Online at <http://hdl.handle.net/10023/5075>.

Service

Technical programme committees

- 2024 **Program committee, The 33rd International Conference on Computer Communications and Networks (ICCCN '24)**, *July, 2024*, Big Island, Hawaii, USA
- 2023 **Program committee, The 32nd International Conference on Computer Communications and Networks (ICCCN '23)**, *July, 2023*, Honolulu, Hawaii, USA
- 2022 **Program committee, The 2nd IEEE/IFIP International Workshop on Internet of Things Management (Manage-IoT '22, co-located with IEEE/IFIP NOMS '22)**, *April, 2022*, Budapest, Hungary
- 2021 **Program committee, The 1st Workshop on Security and Privacy for Mobile AI (MAISP '21, co-located with ACM MobiSys '21)**, *24 June, 2021*, Online, Worldwide
- 2020 **Program committee, The 14th ACM Conference on Recommender Systems (RecSys '20)**, *22-26 September, 2020*, Online, Worldwide
- 2019 **Program committee, Demo & LBR of the 27th ACM Conference on User Modelling, Adaption and Personalization (UMAP '19)**, *9-12 June, 2019*, Larnaca, Cyprus
Program committee, The 27th ACM Conference on User Modelling, Adaption and Personalization (UMAP '19), *9-12 June, 2019*, Larnaca, Cyprus
- 2018 **Poster committee, The 16th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys '18)**, *10-15 June, 2018*, Munich, Germany

Organising Committee

- 2020 **Local arrangements co-chairs, The 26th Annual International Conference on Mobile Computing and Networks (MobiCom '20)**, *21-25 September, 2020*, London, United Kingdom

Reviewer

- 2024 **IEEE Transactions on Knowledge and Data Engineering**
- 2023 **IEEE Internet of Things Journal**
IEEE Transactions on Dependable and Secure Computing
Computer & Security
IEEE Transactions on Big Data
- 2022 **IEEE Transactions on Computers**
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies
ACM Transactions on Privacy and Security
ACM Transactions on Computing for Healthcare
- 2021 **IEEE Transactions on Information Forensics and Security**
IEEE Transactions on Big Data
- 2020 **IEEE Transactions on Big Data**
Computers & Security
- 2018 **Computer Communications**
Journal of Information Security and Applications
- 2016 **The 13th International Conference on Wirtschaftsinformatik**, *February 12-15, 2017*, St. Gallen, Switzerland
Policy & Internet
- 2015 **The 12th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC '15)**, *August 10-14, 2015*, Beijing, China
The 7th EAI International Conference on Mobile Computing, Applications and Services (MobiCASE '15), *November 12-13, 2015*, Berlin, Germany

Student Volunteer

- 2016 **The 8th EAI International Conference on Mobile Computing, Applications and Services (MobiCASE '16)**, *Cambridge, UK*

The 21st International Conference on Intelligent User Interface (IUI '16), Sonoma, CA, USA

Talks

- 2021 **"Federated Learning in the Wild"**, *Brave Research Reading Session*, Online
"Smart Healthcare using IoT Data and Machine Learning", *Sensing and the Internet of Things*, Online
"IoT Technology based Solutions to Challenges in Healthcare", *ULTRATOOL-IoT Student Project*, Online
- 2020 **"IoT Technology based Solutions to Challenges in Healthcare"**, *Sensing and the Internet of Things*, Online
"Privacy-preserving Activity and Health Monitoring on Databox", *The Third ACM International Workshop on Edge Systems, Analytics and Networking*, Online
- 2018 **"Human Data Interaction"**, *WAIS Seminar*, Southampton
- 2017 **"A Robust Reputation-based Location-privacy Recommender System using Opportunistic Networks"**, *The Scottish Networking Event (SCONE)*, Glasgow
- 2016 **"A Robust Reputation-based Location-privacy Recommender System using Opportunistic Networks"**, *The 8th EAI International Conference on Mobile Computing, Applications and Services*, Cambridge
"Usable Privacy in Location-Sharing Services", *The Student Consortium of the 21st International Conference on Intelligent User Interfaces*, Sonoma
"The Effect of Privacy Concerns on Privacy Recommenders", *The 21st International Conference on Intelligent User Interfaces*, Sonoma
- 2014 **"Privacy-aware Location-privacy Preference Recommendations"**, *The 11th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services*, London
"Privacy-aware Location-privacy Preference Recommendations", *The Scottish Networking Event (SCONE)*, Edinburgh

Funding

- 2023 **Building a Minimal Viable Digital Identity from Digital Footprints (Co-I)**, *EPSRC SPRITE+ Sandpit*, 4 months, £35.9k
AI Testing Innovation (Expert Panel), *Innovate UK Transformative Technologies*, 6 months, £49.9k
- 2013–2017 **600th Anniversary Scholarship (award rate = 7/80)**, *University of St Andrews*
- 2016 **IUI 2016 Student Travel Grant**

Student Supervision

- 2021–2022 **Ph.D (as assistant supervisor)**, Mengjia Niu
ICL
- 2021–2022 **Ph.D (as assistant supervisor)**, Yushan Huang
ICL
- 2020–2021 **Undergraduate Research Opportunity Programme**, Leonardo Bossi
ICL
- 2019–2020 **Undergraduate Research Opportunity Programme**, Hanyang Liu and Danni Shi
ICL

Teaching

- 2023–2024 **Lecturer (Module Lead)**, NETS (Network Security)
York
- 2022–2023 **Lecturer (Module Lead)**, NETS (Information & Network Security)/NTAC (Networks & Communications Security: Threats, Attacks & Countermeasures)
York
Lecturer, CRES (Cyber Security Research Skills)

Mentor, WASP (Wider Aspects of Cyber Security)

2021-2022 **Guest lecturer**, Sensing and Internet of Things
ICL

2020-2021 **Guest lecturer**, Sensing and Internet of Things
ICL

Tutor, Design Engineering Futures

2018-2019 **Tutor**, COMP6234 (Data Visualisation)
Southampton

2016-2017 **Demonstrator**, CS1002 (Object-Oriented Programming)
St Andrews

Demonstrator, CS2001 (Foundations of Computation)
Demonstrator, CS2003 (The Internet and the Web: Concepts and Programming)

2015-2016 **Tutor**, CS1002 (Object-Oriented Programming)
St Andrews

Tutor, CS1006 (Programming Projects)
Demonstrator, CS1002 (Object-Oriented Programming)
Demonstrator, CS2001 (Foundations of Computation)
Demonstrator, CS2003 (The Internet and the Web: Concepts and Programming)

2014-2015 **Tutor**, CS1006 (Programming Projects)
St Andrews

Demonstrator, CS1002 (Object-Oriented Programming)
Demonstrator, CS1003 (Programming with Data)
Demonstrator, CS1006 (Programming Projects)
Demonstrator, CS2003 (The Internet and the Web: Concepts and Programming)