Basic information

- Name: Pengyuan Zhou
- Affiliation: Aarhus University, Department of Electrical and Comptuer Engineering Helsingforsgade 10, Aarhus N, 8200 Denmark
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1. Degrees

- Ph.D., Computer Science, University of Helsinki, Finland, 2020
- B.S.&M.S., EE, University of Science and Technology of Beijing, China, 2015

2. Current employment

- Assistant Professor, Dept. of ECE, Aarhus University, 2024.3 – now

3. Previous experience

- Research Associate Professor, University of Science and Technology of China, 2021.09 – 2024.1
- Postdoctoral Researcher, University of Helsinki, Finland, 2020.07-06.2021
- Visiting Researcher (10 months in total), HKUST, HK, 2018.02-05, 2021.01-06
- Visiting Researcher (4 months), UNINETT, Trondheim, Norway, 2017.02

Research Qualifications

4. Fundings

- Fairness and Privacy Guarantee Method in Metaverse, 2022-2023, Key support plan projects, Ministry of Science and Technology (China), 500k RMB, PI
- Cause Analysis of Social Contradiction, 2021-2024, National Key Research and Development Program of China, Ministry of Science and Technology (China), 84 million RMB, proposal coordinator, sub-topic (1million) PI

5. Collaborators

- North America: Niantic Lab@RIT, HCI Game Group@Waterloo
- Finland: Dept.CS@Univ. of Helsinki, University of Oulu, VTT
- Japan: MNL@University of Electro-Communications, LiLab@Univ of Tokyo
- HongKong: SymLab@HKUST, ARMLab@PolyU HK
- Mainland: Future Intelligence Lab@Tsinghua, LDS@USTC, MSN@Fudan University

- UK: Systems Research Group@Univ. of Cambridge

6. Softwares:

- Federated Wearable end-to-end System, including smart watch app, phone trainer, and cloud parameter server.
  Related paper was accepted by ACM Ubicomp 2022.
- Decentralized multi-agent Reinforcement Learning for traffic light control, 18 stars, the code was accepted by Flow (1000 stars)
  Related paper was accepted by IEEE Trans. Intell. Transp. Syst. (impact factor: 9.551, cited by 51)
- Multipath AR Edge Offloading
  Related paper accepted by IEEE Percom'20(acceptance rate: 14.2%)
- KotlinSyft (as a team), 81 Stars

7. Master's and Bachelor´s theses Supervision

- PhD thesis cosupervision: 3, Master thesis supervision: 4, Bachelor thesis supervision: 4 (USTC, 2021-2024)
- Master thesis examination: 6, Bachelor thesis examination: 16 (USTC, 2021-2024)
- Master thesis supervision: 2 (Aarhus, 2024-)

Academic Services:

- Lead Guest Editor, IEEE Vehicular Technology Magazine
- Guest Editor, IEEE Network Magazine
- ACM MobiSys 2023, Demo Chair
- IEEE MetaCom 2023, Session Chair
- MetaSys, DTMS, ISACom, workshops @ ACM MobiSys 2023, Chair
- MetaBuild workshop @ IEEE VR, 2022, Chair
- TPC of ACM MM'23-24, AAAI'22-24, IEEE ICME'23, IEEE IMSAR'23, IEEE MeteCom'23, IJCAI'21 etc.
- Reviewer for IEEE TPDS, TDSC, TMC, TWC, TITS, TCCN etc.

List of publications

Citations: 2332, h-index 18, i10-index 24. (Google Scholar)

* corresponding author, __ supervised student

- Wei Tang, Yixin Cao, Jiahao Ying, Bo Wang, Yuyue Zhao, Yong Liao, **Pengyuan Zhou**, "A+ B: A General Generator-Reader Framework for Optimizing LLMs to Unleash Synergy Potential", ACL Findings 2024

- Buyun He, Yingguang Yang, Qi Wu, Hao Liu, Renyu Yang, Hao Peng, Xiang Wang, Yong Liao, **Pengyuan Zhou**, “Dynamicity-aware Social Bot Detection with Dynamic Graph Transformers”, IJCAI 2024
- Hao Liu, Yingguang Yang, Qi Wu, Buyun He, Yong Liao, **Pengyuan Zhou***, “FacGNN: Multi-Faceted Fairness Enhancement for GNN Through Adversarial and Contrastive Learning”, IEEE IJCNN 2024
- Qinglong Huang, Haoran Li, Yong Liao, Yanbin Hao, **Pengyuan Zhou**, “Noise-NeRF: Hide Information in Neural Radiance Fields using Trainable Noise”, ICANN 2024
- Botao Xiong, Nan Li, Yong Liao, **Pengyuan Zhou***, “Gamified Alzheimer's Disease Diagnosis via Virtual Reality”, IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops, 2024
- Reza Hadi Mogavi, Juhyung Son, Simin YANG, Derrick M. Wang, Lydia Choong, Ahmad ALHILAL, **Pengyuan Zhou**, Pan Hui, Lennart E. Nacke, “The Jade Gateway to Exergaming: How Socio-Cultural Factors Shape Exergaming Among East Asian Older Adults”, ACM CHI PLAY 2024
- Hao Ai, Zidong Cao, Haonan Lu, Chen Chen, Jian Ma, **Pengyuan Zhou**, Tae-Kyun Kim, Pan Hui, Lin Wang, “Dream360: Diverse and Immersive Outdoor Virtual Scene Creation via Transformer-Based 360 Image Outpainting”, IEEE Transactions on Visualization and Computer Graphics, 2024
- Xu Zheng, **Pengyuan Zhou**, A Vasilakos, Lin Wang, “Semantics, Distortion, and Style Matter: Towards Source-free UDA for Panoramic Segmentation”, IEEE CVPR 2024
- Jiangnan Xu, Konstantinos Papangelis, Garreth W Tigwell, Nicolas LaLone, **Pengyuan Zhou**, Michael Saker, Alan Chamberlain, John Dunham, Sanzida Mojib Luna, David Schwartz, “Spatial Computing: Defining the Vision for the Future”, Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI EA ’24)
- Jingru Duan, Yanbin Hao, Bin Zhu, Lechao Cheng, **Pengyuan Zhou**, Xiang Wang, “Efficient Unsupervised Video Hashing with Contextual Modeling and Structural Controlling”, IEEE Transactions on Multimedia, 2024
- Hengwei Xu, **Pengyuan Zhou***, Yong Liao, Haiyong Xie," Mercury: Fast and Optimal Device Placement for Large Deep Learning Models." ACM ICPP 2023 (acceptance rate: 29.1%)
- Yuchen Ding, **Pengyuan Zhou***, “Demo: Near Real-time ChatGPT-AR”, ACM MobiSys 2023
- Yingguang Yang, Renyu Yang, Hao Peng, Yangyang Li, Tong Li, Yong Liao, and **Pengyuan Zhou***. "FedACK: Federated Adversarial Contrastive Knowledge Distillation for Cross-Lingual and Cross-Model Social Bot Detection." ACM WWW 2023 (acceptance rate: 19.2%)
- **Pengyuan Zhou**, Lik-Hang Lee, Zhi Liu, Hang Qiu, Tristan Braud, Aaron Yi Ding, Sasu Tarkoma, Pan Hui, “Metaverse for Connected and Automated Vehicles and Intelligent Transportation Systems [From the Guest Editors]”, IEEE Vehicular Technology Magazine, 2023
- Bo Han, Tristan Braud, Mario Di Francesco, Maria Gorlatova, Luyang Liu, Gabor Soros, **Pengyuan Zhou**, “Guest Editorial: Networking Challenges and Opportunities for Multi-UserXR and the Metaverse”, IEEE Network, 2023
- Shuhao Fu, Yong Liao, **Pengyuan Zhou***, “Poster: Training ChatGPT-like Models with In-network Computation”, ACM APNET 2023
- Xiaolu Chen, Jie Bao, **Pengyuan Zhou*** and Yong Liao, “Hierarchical Privacy Preservation in Knowledge Graph”, IEEE ICDCS 2023

- Jie Li, Huiyu Wang, Zhi Liu, **Pengyuan Zhou**, Xianfu Chen, Qiyue Li, Richang Hong. “Towards Optimal Real-time Volumetric Video Streaming: A Rolling Optimization and Deep Reinforcement Learning Based Approach”, IEEE Transactions on Circuits and Systems for Video Technology, 2023
- Kirill Shatilov, Ahmad Alhilal, Tristan Braud, Lik-Hang Lee, **Pengyuan Zhou**, Pan Hui, “Players are not Ready 101: A Tutorial on Organising Mixed-mode Events in the Metaverse”, ACM MetaSys @ MobiSys, 2023
- **Pengyuan Zhou***, Hengwei Xu, Lik Hang Lee, Pei Fang, and Pan Hui. "Are you left out? an efficient and fair federated learning for personalized profiles on wearable devices of inferior networking conditions." ACM Ubicomp 2022
- **Pengyuan Zhou***, Pranvera Kortoçi, Yui-Pan Yau, Benjamin Finley, Xiujun Wang, Tristan Braud, Lik-Hang Lee, Sasu Tarkoma, Jussi Kangasharju, and Pan Hui. "AICP: Augmented informative cooperative perception." *IEEE Transactions on Intelligent Transportation Systems* 23, no. 11 (2022): 22505-22518. (impact factor: 9.551)
- Zhang, Wenxiao, Sikun Lin, Farshid Hassani Bijarbooneh, Hao-Fei Cheng, Tristan Braud, **Pengyuan Zhou**, Lik-Hang Lee, and Pan Hui. "Edgexar: A 6-dof camera multi-target interaction framework for mar with user-friendly latency compensation." *Proceedings of the ACM on Human-Computer Interaction* 6, no. EICS (2022): 1-24.
- Kortoçi, Pranvera, Yilei Liang**, Pengyuan Zhou**, Lik-Hang Lee, Abbas Mehrabi, Pan Hui, Sasu Tarkoma, and Jon Crowcroft. "Federated Split GANs." In Proceedings of the 1st ACM Workshop on Data Privacy and Federated Learning Technologies for Mobile Edge Network, pp. 25-30. 2022.
- Liang, Yilei, Pranvera Kortoçi, **Pengyuan Zhou**, Lik-Hang Lee, Abbas Mehrabi, Pan Hui, Sasu Tarkoma, and Jon Crowcroft. "Federated split GANs for collaborative training with heterogeneous devices." *Software Impacts* 14 (2022): 100436.
- Vallapuram, Anish K., **Pengyuan Zhou***, Young D. Kwon, Lik Hang Lee, Hengwei Xu, and Pan Hui. "Hidenseek: Federated lottery ticket via server-side pruning and sign supermask." *arXiv preprint arXiv:2206.04385* (2022).
- Sun, Mingjie, **Pengyuan Zhou**, Hui Tian, Yong Liao, and Haiyong Xie. "Spatial-Temporal Attention Network for Crime Prediction with Adaptive Graph Learning." In *31st International Conference on Artificial Neural Networks,* Bristol, UK, September 6–9, 2022
- Hao, Yanbin, Jingru Duan, Hao Zhang, Bin Zhu, Pengyuan Zhou, and Xiangnan He. "Unsupervised Video Hashing with Multi-granularity Contextualization and Multi-structure Preservation." In Proceedings of the 30th ACM International Conference on Multimedia, pp. 3754-3763. 2022.
- Lik-Hang Lee, Tristan Braud, **Pengyuan Zhou**, Lin Wang, Dianlei Xu, Zijun Lin, Abhishek Kumar, Carlos Bermejo, Pan Hui, “All one needs to know about metaverse: A complete survey on technological singularity, virtual ecosystem, and research agenda”, arXiv preprint arXiv:2110.05352
- Zavodovski, Aleksandr, Lorenzo Corneo, Andreas Johnsson, Nitinder Mohan, Suzan Bayhan, **Pengyuan Zhou**, Walter Wong, and Jussi Kangasharju. "Decentralizing computation with edge computing: Potential and challenges." In Proceedings of the Interdisciplinary Workshop on (de) Centralization in the Internet, pp. 34-36. 2021.
- **Pengyuan Zhou***, Benjamin Finley, Xuebing Li, Sasu Tarkoma, Jussi Kangasharju, Mostafa Ammar, and Pan Hui. "5G MEC computation handoff for mobile augmented reality." *arXiv preprint arXiv:2101.00256* (2021).
- **Pengyuan Zhou,** Xianfu Chen, Zhi Liu, Tristan Braud, Pan Hui, and Jussi Kangasharju. "DRLE: Decentralized reinforcement learning at the edge for traffic light control in the

IoV." *IEEE Transactions on Intelligent Transportation Systems* 22, no. 4 (2020): 2262-2273. (impact factor: 9.551)

- Tristan Braud, **Pengyuan Zhou**, Jussi Kangasharju, and Pan Hui. "Multipath computation offloading for mobile augmented reality." In *2020 IEEE International Conference on Pervasive Computing and Communications (PerCom)*, pp. 1-10. IEEE, 2020. (Acceptance rate: 14.2%)
- **Pengyuan Zhou**, Tristan Braud, Aleksandr Zavodovski, Zhi Liu, Xianfu Chen, Pan Hui, and Jussi Kangasharju. "Edge-facilitated augmented vision in vehicle-to-everything networks." *IEEE Transactions on Vehicular Technology* 69, no. 10 (2020): 12187-12201.
- Wong, Walter, Lorenzo Corneo, Aleksandr Zavodovski, **Pengyuan Zhou**, Nitinder Mohan, and Jussi Kangasharju. "Bricklayer: Resource composition on the spot market." In *ICC 2020-2020 IEEE International Conference on Communications (ICC)*, pp. 1-7. IEEE, 2020.
- Zavodovski, Aleksandr, Suzan Bayhan, Nitinder Mohan, **Pengyuan Zhou**, Walter Wong, and Jussi Kangasharju. "DeCloud: Truthful decentralized double auction for edge clouds." IEEE ICDCS 2019
- Wong, Walter, Aleksandr Zavodovski, **Pengyuan Zhou**, and Jussi Kangasharju. "Container deployment strategy for edge networking." In *Proceedings of the 4th Workshop on Middleware for Edge Clouds & Cloudlets*, pp. 1-6. 2019.
- **Pengyuan Zhou**, Tristan Braud, Ahmad Alhilal, Pan Hui, and Jussi Kangasharju. "Erl: Edge based reinforcement learning for optimized urban traffic light control." In *2019 IEEE International Conference on Pervasive Computing and Communications Workshops (PerCom Workshops)*, pp. 849-854. IEEE, 2019.
- **Pengyuan Zhou**, Wenxiao Zhang, Tristan Braud, Pan Hui, and Jussi Kangasharju. "Enhanced augmented reality applications in vehicle-to-edge networks." In *2019 22nd Conference on Innovation in Clouds, Internet and Networks and Workshops (ICIN)*, pp. 167-174. IEEE, 2019.
- **Pengyuan Zhou**, Wenxiao Zhang, Tristan Braud, Pan Hui, and Jussi Kangasharju. "Arve: Augmented reality applications in vehicle to edge networks." In *Proceedings of the 2018 Workshop on Mobile Edge Communications*, pp. 25-30. 2018.
- Mohan, Nitinder, Aleksandr Zavodovski, **Pengyuan Zhou**, and Jussi Kangasharju. "Anveshak: Placing edge servers in the wild." In *Proceedings of the 2018 Workshop on Mobile Edge Communications*, pp. 7-12. 2018.
- Mohan, Nitinder, **Pengyuan Zhou**, Keerthana Govindaraj, and Jussi Kangasharju. "Managing data in computational edge clouds." In *Proceedings of the Workshop on Mobile Edge Communications*, pp. 19-24. 2017.
- Mohan, Nitinder, **Pengyuan Zhou**, Keerthana Govindaraj, and Jussi Kangasharju. "Grouping computational data in resource caches of edge-fog cloud." In *Proceedings of the 4th Workshop on CrossCloud Infrastructures & Platforms*, pp. 1-2. 2017.
- **Pengyuan Zhou**, and Jussi Kangasharju. "Profiling and grouping users to edge resources according to user interest similarity." In *Proceedings of the 2016 ACM Workshop on Cloud-Assisted Networking*, pp. 43-48. 2016.