

Basic information

- Name: Peng Yuan Zhou
- Affiliation: Aarhus University, Department of Electrical and Computer 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**, "Dynamicty-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.