

Mengwei Xu

State Key Laboratory of Networking and Switching Technology

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Research Interest

Computer systems, mobile computing

Recent focus: AI on mobile/edge devices, including smartphones, IoTs, etc.

Education & Experience

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| 09/2015 – 07/2020 | PhD of Computer Science , Peking University <ul style="list-style-type: none">• Advisor: Prof. Gang Huang, Prof. Xuanzhe Liu |
| 09/2011 – 07/2015 | BS of Computer Science , Peking University |
| 11/2018 – 11/2019 | Visiting Scholar , Purdue University <ul style="list-style-type: none">• Advisor: Prof. Felix Xiaozhu Lin |
| 03/2015 – 03/2016 | Research Intern , Microsoft Research Asia <ul style="list-style-type: none">• Mentor: Dr. Yunxin Liu |

Employment

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| 07/2020 – present | Assistant Professor , BUPT |
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Honors & Awards

- Outstanding Graduate of Beijing, 2020/2015
- Outstanding Graduate of Peking University, 2020/2015
- National Scholarship (Ministry of Education, China), 2017/18
- Presidential Scholarship (Peking University), 2015/16/17/19

Conference Proceedings (*=co-primary)

- [1] “Approximate Query Service on Autonomous IoT Cameras” **Mengwei Xu**, Xiwen Zhang, Yunxin Liu, Xuanzhe Liu, and Felix Xiaozhu Lin, in *Proc. ACM Int. Conf. Mobile Systems, Applications and Services (MobiSys)*, pages 191-205, acceptance rate 19% (34/175), 2020.
- [2] “A First Look at Deep Learning Apps on Smartphones” **Mengwei Xu**, Jiawei Liu, Yuanqiang Liu, Felix Xiaozhu Lin, Yunxin Liu, and Xuanzhe Liu, in *Proc. the World Wide Web Conference (WWW)*, pages 2125–2136, acceptance rate 18% (225/1247), 2019.
- [3] “DeepType: On-Device Deep Learning for Input Personalization Service with Minimal Privacy Concern” **Mengwei Xu**, Feng Qian, Qiaozhu Mei, Kang Huang, and Xuanzhe Liu. in

Proc. the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), pages 4:1-4:26, 2018.

- [4] “DeepCache: Principled Cache for Mobile Deep Vision” **Mengwei Xu**, Mengze Zhu, Yunxin Liu, Felix Xiaozhu Lin, and Xuanzhe Liu, in *Proc. ACM Int. Conf. Mobile Computing and Networking (MobiCom)*, pages 129–144, acceptance rate 22% (42/187), 2018.
- [5] “PrivacyShield: A Mobile System for Supporting Subtle Just-in-time Privacy Provisioning through Off-Screen-based Touch Gestures” Saumay Pushp, Yunxin Liu, **Mengwei Xu**, Changyoung Koh, and Junehwa Song. in *Proc. the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, pages 2:1-2:38, 2018.
- [6] “Power SandBox: Power Awareness Redefined” Liwei Guo*, Tiantu Xu*, **Mengwei Xu**, Xuanzhe Liu, and Felix Xiaozhu Lin, in *Proc. European Conference on Computer Systems (EuroSys)*, pages 37:1–37:15, acceptance rate 16% (43/262), 2018.
- [7] “AppHolmes: Detecting and Characterizing App Collusion among Third-Party Android Markets” **Mengwei Xu**, Yun Ma, Xuanzhe Liu, Felix Xiaozhu Lin, and Yunxin Liu, in *Proc. the World Wide Web Conference (WWW)*, pages 143–152, acceptance rate 17% (164/966), 2017.

Journal Publications

- [1] “Autonomous Learning System towards Mobile Intelligence” **Mengwei Xu**, Yuanqiang Liu, Kang Huang, Xuanzhe Liu, and Gang Huang, in *Journal of Software* (in Chinese), 2020.
- [2] “DeepWear: Adaptive Local Offloading for On-Wearable Deep Learning” **Mengwei Xu**, Feng Qian, Mengze Zhu, Feifan Huang, Saumay Pushp, and Xuanzhe Liu, in *IEEE Transactions on Mobile Computing (TMC)*, 19(2), pages 314-330, 2019.
- [3] “ShuffleDog: Characterizing and Adapting User-Perceived Latency of Android Apps” Gang Huang, **Mengwei Xu**, Felix Xiaozhu Lin, Yunxin Liu, Yun Ma, Saumay Pushp, and Xuanzhe Liu, in *IEEE Transactions on Mobile Computing (TMC)*, 16(10), pages 2913–2926, 2017.
- [4] “MUIT: A Domain-Specific Language and its Middleware for Adaptive Mobile Web- based User Interfaces in WS-BPEL” Xuanzhe Liu, **Mengwei Xu**, Teng Teng, Gang Huang, and Hong Mei, in *IEEE Transactions on Services Computing (TSC)*, 2016.

Under Review

- [1] “Supporting Video Queries on Zero-Streaming Cameras” **Mengwei Xu***, Tiantu Xu*, Yunxin Liu, Xuanzhe Liu, Gang Huang, and Felix Xiaozhu Lin, in (arXiv:1904.12342).
- [2] “Neural Architecture Search over Decentralized Data” **Mengwei Xu**, Yuxin Zhao, Kaigui Bian, Gang Huang, Xuanzhe Liu, in (arXiv: 2002.06352).
- [3] “Heterogeneity-Aware Federated Learning” Chengxu Yang, Qipeng Wang, **Mengwei Xu**, Shangguang Wang, Kaigui Bian, Xuanzhe Liu, in (arXiv:2006.06983).

Academic Services

- TPC Member, MobiSys Rising Stars Forum, 2019.

- Reviewer, ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT).
- Reviewer, IEEE Transactions on Mobile Computing (TMC).
- Reviewer, IEEE Transactions on Service Computing (TSC).
- External reviewer, WWW 2019/2018/2017; KDD 2018/2017; CIKM 2018; etc.

Teaching

- TA, Operating System Practice, Undergraduates, PKU (Spring 2017; Fall 2016).
- TA, Distributed Machine Learning Systems, Graduates, PKU (Fall 2019).
- TA, Introduction to Computing, Undergraduates, PKU (Fall 2016; Fall 2014).
- TA, Foundations of Computer Application, Undergraduates, PKU (Spring 2015).