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简介

李元春，清华大学智能产业研究院助理研究员，于北京大学计算机科学与技术系获得学士、博士学位，曾任微软亚洲研究院主管研究员、卡内基梅隆大学访问学者。主要研究方向为边缘端智能系统的高能效性和可靠性，已在相关领域顶级会议（如 ICSE，FSE，ISSTA， MobiCom，MobiSys，UbiComp，SIGIR，ICLR 等）发表二十余篇高水平学术论文，并担任多个国际知名期刊/会议的审稿人和程序委员会委员。主导的工作获得了 CCF A 类会议 UbiComp 的最佳论文提名奖，以及领域知名会议 IS-EUD 的最佳论文奖，相关工具在 GitHub 等开源软件平台上被广泛应用。

教育经历

博士研究生，计算机软件与理论，北京大学 2014.09 – 2019.07

- 导师：郭耀，陈向群

访问博士生，人机交互研究所，卡内基梅隆大学 2016.09 – 2017.09

- 导师： Jason I. Hong, Yuvraj Agarwal

本科，计算机科学与技术，北京大学 2010.09 – 2014.09

工作及科研经历

助理研究员，清华大学智能产业研究院，北京，中国 2021.11 至今

高级研究员，微软亚洲研究院，北京，中国 2021.03 – 2021.11

研究员，微软亚洲研究院，北京，中国 2019.07 – 2021.03

研究实习生，微软研究院，雷德蒙德，美国 2018.05 – 2018.08

主要同行评审论文

*代表共同第一作者或通讯作者（指导学生为第一作者）

1. Jaemin Shin, **Yuanchun Li***, Yunxin Liu, Sung-Ju Lee. "FedBalancer: Data and Pace Control for Efficient Federated Learning on Heterogeneous Clients". The 20th ACM International Conference on Mobile Systems, Applications, and Services **(MobiSys 2022, conditionally accepted)**
2. Divyam Madaan, Jaehong Yoon, **Yuanchun Li**, Yunxin Liu, Sung Ju Hwang. "Representational Continuity for Unsupervised Continual Learning". International Conference on Learning Representations **(ICLR 2022, Oral)**
3. Ziqi Zhang, **Yuanchun Li***, Jindong Wang, Bingyan Liu, Ding Li, Xiangqun Chen, Yao Guo, Yunxin Liu. "ReMoS: Reducing Defect Inheritance in Transfer Learning via Relevant Model Slicing". In Proceedings of the 2022 IEEE/ACM 44th International Conference on Software Engineering. **(ICSE 2022, CCF-A)**
4. Bingyan Liu, Yifeng Cai, Ziqi Zhang, **Yuanchun Li**, Leye Wang, Ding Li, Yao Guo, Xiangqun Chen. "DistFL: Distribution-aware Federated Learning for Mobile Scenarios". Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. **(UbiComp 2022, CCF-A)**
5. Shiqi Jiang, Zhiqi Lin, **Yuanchun Li**, Yuanchao Shu, Yunxin Liu. "Flexible High-resolution Object Detection on Edge Devices with Tunable Latency". In Proceedings of the 27th Annual International Conference On Mobile Computing And Networking **(MobiCom 2021, CCF-A)**.
6. Chengxu Yang, **Yuanchun Li***, Mengwei Xu, Zhenpeng Chen, Yunxin Liu, Gang Huang, Xuanzhe Liu. "TaintStream: Fine-grained Taint Tracking for Big Data Platforms through Dynamic Code Translation". In Proceedings of the 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering **(ESEC/FSE 2021, CCF-A).**
7. **Yuanchun Li**, Ziqi Zhang, Bingyan Liu, Ziyue Yang, Yunxin Liu. "ModelDiff: Testing-based DNN Similarity Comparison for Model Reuse Detection". The ACM SIGSOFT International Symposium on Software Testing and Analysis **(ISSTA 2021, CCF-A)**.
8. **Yuanchun Li**, Oriana Riva. "Glider: A reinforcement learning approach to extract UI scripts from websites". In Proceedings of the 44th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '21). Association for Computing Machinery, New York, NY, USA, 1420–1430. **(SIGIR 2021, CCF-A)**.
9. Liu Wang, Ren He, Haoyu Wang, Pengcheng Xia, **Yuanchun Li**, Lei Wu, Yajin Zhou, Xiapu Luo, Yulei Sui, Yao Guo, Guoai Xu. "Beyond the Virus: A First Look at Coronavirus-themed Android Malware". Empirical Software Engineering **(EMSE 2021, CCF-B)**.
10. Jiayi Hua, **Yuanchun Li**, Haoyu Wang. "MMGuard: Automatically Protecting On-Device Deep Learning Models in Android Apps". The 4th Deep Learning and Security Workshop **(DLS 2021)**, Co-located with S&P 2021.
11. **Yuanchun Li**, Jiayi Hua, Haoyu Wang, Chunyang Chen, Yunxin Liu. "DeepBackdoor: Black-box Backdoor Attack on Deep Learning Models through Neural Payload Injection". In Proceedings of the 2021 IEEE/ACM 43th International Conference on Software Engineering. **(ICSE 2021, CCF-A).**
12. Bingyan Liu, **Yuanchun Li***, Yao Guo, Xiangqun Chen, Yunxin Liu. "PMC: A Privacy-preserving Deep Learning Model Customization Framework for Edge Computing". Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. 4, 4, Article 139 (December 2020), 25 pages. **(UbiComp 2021, CCF-A).**
13. Ziqi Zhang, **Yuanchun Li***, Yao Guo, Xiangqun Chen, Yunxin Liu. "Dynamic Slicing for Deep Neural Networks." In Proceedings of the 28th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering. Association for Computing Machinery, New York, NY, USA, 838–850. **(ESEC/FSE 2020, CCF-A).**
14. **Yuanchun Li**, Ziyue Yang*, Yao Guo, Xiangqun Chen. "Humanoid: a deep learning-based approach to automated black-box Android app testing." In Proceedings of the 34th IEEE/ACM International Conference on Automated Software Engineering. IEEE Press, 1070–1073. **(ASE 2019 Tool).**

15. **Yuanchun Li**, Ziyue Yang, Yao Guo, Xiangqun Chen, Yuvraj Agarwal, and Jason Hong. "Automated Extraction of Personal Knowledge from Smartphone Push Notifications." The IEEE International Conference on Big Data , 733-742. **(BigData 2018, CCF-B).**
16. Yao Guo, **Yuanchun Li**, Ziyue Yang, and Xiangqun Chen. "What's inside your app?: Understanding Feature Redundancy in Mobile Apps." In Proceedings of the IEEE/ACM International Conference on Program Comprehension, 266-276. **(ICPC 2018, CCF-B).**
17. Haojian Jin, Minyi Liu, Kevan Dodhia, **Yuanchun Li**, Gaurav Srivastava, Matthew Fredrikson, Yuvraj Agarwal, and Jason I. Hong. 2018. Why Are They Collecting My Data? Inferring the Purposes of Network Traffic in Mobile Apps. Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. 2, 4, Article 173 (December 2018), 27 pages. **(UbiComp 2020, CCF-A).**
18. **Yuanchun Li**, Fanglin Chen, Toby Jia-Jun Li, Yao Guo, Gang Huang, Matthew Fredrikson, Yuvraj Agarwal, and Jason I. Hong. "PrivacyStreams: Enabling Transparency in Personal Data Processing for Mobile Apps." Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. 1, 3, Article 76 (September 2017), 26 pages. **(UbiComp 2017, CCF-A).**
19. **Yuanchun Li**, Baoxiong Jia, Yao Guo, and Xiangqun Chen. "Mining User Reviews for Mobile App Comparisons." Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. 1, 3, Article 75 (September 2017), 15 pages. **(UbiComp 2017, CCF-A).**
20. Haoyu Wang, **Yuanchun Li**, Yao Guo, Yuvraj Agarwal, and Jason I. Hong. "Understanding the Purpose of Permission Use in Mobile Apps." ACM Trans. Inf. Syst. 35, 4, Article 43 (July 2017), 40 pages. **(TOIS 2017, CCF-A).**
21. **Yuanchun Li**, Ziyue Yang, Yao Guo and Xiangqun Chen. "DroidBot: A Lightweight UI-Guided Test Input Generator For Android." In Proceedings of the 2017 IEEE/ACM 39th International Conference on Software Engineering Companion, 321-326. **(ICSE 2017 Tool).**
22. Toby Jia-Jun Li, **Yuanchun Li**, Fanglin Chen and Brad A. Myers. "Programming IoT Devices by Demonstration Using Mobile Apps." End-User Development. International Symposium on End User Development, 3-17. **(IS-EUD 2017, Best Paper Award)**.
23. **Yuanchun Li**, Yao Guo, and Xiangqun Chen. "PERUIM: Understanding Mobile Application Privacy with Permission-UI Mapping." In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing, 682-693. **(UbiComp 2016, CCF-A, Honorable Mention Award)**.
24. **Yuanchun Li**, Yao Guo, Junjun Kong and Xiangqun Chen. "Fixing Sensor-Related Energy Bugs Through Automated Sensing Policy Instrumentation." IEEE/ACM International Symposium on Low Power Electronics and Design, 321-326. **(ISLPED 2015, CCF-C)**.

开源软件

主导开发的一些开源工具在相应的研究领域获得了广泛使用：

- DroidBot – 轻量级 Android 应用动态分析工具 （500+ stars）
  - https://github.com/honeynet/droidbot
- PrivacyStreams – 隐私安全的个人数据编程框架（200+ stars）
  - https://github.com/PrivacyStreams/PrivacyStreams
- Humanoid – 基于深度学习的移动应用交互界面测试工具（~100 stars）
  - https://github.com/yzygitzh/Humanoid

教学、助教经历

- 《人工智能系统》在线课程，讲师 2021 年
  - https://github.com/microsoft/AI-System
- 操作系统实习（实验班），助教 2014 年秋，2015 年春
  2015 年秋，2016 年春
- 编译原理，助教 2015 年秋，2016 年春
- 计算机系统导论，助教 2013 年秋，2014 年秋
- Google 编程之夏，导师 2017 年夏，2018 年夏

荣誉和奖励

- 博士生国家奖学金 2017
- IS-EUD 最佳论文奖 2017
- Bosch/Bezirk 物联网黑客马拉松第一名（1000 美元） 2016
- UbiComp 最佳论文提名奖 2016
- Google 编程之夏（5500 美元） 2016
- 北京大学三好学生 2016
- Google 编程之夏（5500 美元） 2015

语言及技能

- 语言：汉语（母语）
- 语言：英语（熟练，工作用语）
- 编程语言：Python, Java, C++, JavaScript, Scala, SQL, Lisp
- 计算机技能：程序分析，程序验证、强化学习，深度学习