李元春

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简介

　　本人李元春，男，出生于 1993 年 1 月，目前是微软亚洲研究院系统与网络研究组的高级研究员。在加入微软之前，分别在 2014 年和 2019 年在北京大学信息科学技术学院计算机科学与技术系取得本科学位和博士学位。在读期间曾于 2016-2017 年在卡内基梅隆大学访学，于 2018 年在微软研究院总部实习，在小米公司进行合作研究等。

　　本人研究兴趣为软件工程、移动计算和人工智能的交叉领域，尤其关注移动端和云端智能软件及数据平台中的隐私、安全、可靠性等问题，在相关领域顶级会议（如 ICSE，FSE，ISSTA，UbiComp，MobiCom，SIGIR 等）上发表论文二十余篇，其中包括 CCF-A 类会议第一作者长文 9 篇、短文或工具论文 2 篇。本人主导的工作获得了 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

研究经历

研究员、高级研究员，微软亚洲研究院，北京，中国	2019.07 – 现在

- 主要工作：AI 及 AIoT 的可靠性和隐私问题研究

研究实习生，微软研究院，雷德蒙德，美国	2018.05 – 2018.08

- 主要工作：研究将软件的图形交互界面（GUI）自动转化为语音交互接口（VUI）

软件实习生，小米-商业化产品部，北京，中国	2017.10 – 2018.05

- 主要工作：研究基于手机应用数据构建个人知识图谱，生成脱敏的用户画像

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. 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, accepted)**.

2. Chengxu Yang (intern), **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)**.

3. **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)**.

4. **Yuanchun Li**, Oriana Riva. "Glider: A reinforcement learning approach to extract UI scripts from websites". 44th International ACM SIGIR Conference on Research and Development in Information Retrieval **(SIGIR 2021, CCF-A)**.

5. 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)**.

6. 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.

7. **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 2017 IEEE/ACM 39th International Conference on Software Engineering. **(ICSE 2021, CCF-A)**.

8. Bingyan Liu (intern), **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)**.

9. Ziqi Zhang (intern), **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)**.

10. **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)**.

11. **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)**.

12. 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)**.

13. 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).**

14. **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).**

15. **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).**

16. 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).**

17. **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).**

18. 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)**.

19. **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)**.

20. **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

我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

教学、助教经历

• 《人工智能系统》在线课程，讲师	2021 年开始
o 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