
Xiangyu Xu(徐翔宇)

Ph.D. Candidate

Email: Chillex@sjtu.edu.cn;
unbelievablexy@gmail.com

Department of Computer Science and Engineering
Shanghai Jiao Tong University

No. 800 Dongchuan Road
Minhang, Shanghai, 200240
P. R. China

RESEARCH INTERESTS

My research interests include **mobile sensing & computing**, **human-machine interactions**, and **cyber security & privacy**.

I mainly focus on combining machine learning and data mining methods with signal processing techniques to realize futuristic applications, as well as revealing the potential security problems.

Besides the algorithm development, My works have a strong emphasis on system implementation and validation in real-world scenarios.

EDUCATIONAL BACKGROUND

- Ph.D. in Computer Science and Technology, Shanghai Jiao Tong University, Shanghai, China, 2021(expected). Supervised by Prof. Jiadi Yu and Prof. Minglu Li
- B. E. in Automation, Sichuan University, Sichuan, P. R. China, 2016.

RESEARCH EXPERIENCE

- Sep. 2016-present: Research Assistant Shanghai Jiao Tong University
 - **Duties included:** Mainly worked on mobile sensing & computing, human-machine interactions, and cyber security & privacy. Aiming on combining machine learning and data mining methods with signal processing techniques to realize futuristic applications, as well as revealing the potential security problems.
 - **Supervisor:** Prof. Jiadi Yu, Prof. Minglu Li
- Nov. 2019-Nov. 2020: Visiting Scholar Rutgers, The State University of New Jersey
 - **Duties included:** Mainly worked on attacks towards voice-assistant systems and VR/AR-based sensing and security applications. This research experience is at Wireless Information Network Laboratory (WINLAB) and Department of Electrical and Computer Engineering. And the joint Ph.D. training program is supported by China Scholarship Council (CSC).
 - **Supervisor:** Prof. Yingying Chen (IEEE Fellow)
- Mar. 2018-Jul. 2018: Teaching Assistant Shanghai Jiao Tong University
 - **Duties included:** TA for undergraduate course Software Engineering.
 - **Supervisor:** Prof. Jiadi Yu

PUBLICATIONS

Books

1. Jiadi Yu, Yingying Chen, **Xiangyu Xu**, "Sensing Vehicle Conditions for Detecting Driving Behaviors," ISBN 978-3-319-89769-1, 978-3-319-89770-7(eBook), Springer, 2018.

Journal Publications

1. **(CCF-A) Xiangyu Xu**, Jiadi Yu, and Yingying Chen, "Leveraging Acoustic Signals for Fine-grained Breathing Monitoring in Driving Environments," *IEEE Transactions on Mobile Computing (IEEE TMC)*, DOI: 10.1109/TMC.2020.3015828, (2020).
2. **(CCF-A) Xiangyu Xu**, Jiadi Yu, Yingying chen, Yanmin Zhu, Linghe Kong and Minglu Li, "Leveraging Acoustic Signals for Vehicle Steering Tracking with Smartphones," *IEEE Transactions on Mobile Computing (IEEE TMC)*, 19(4): 865–879, (2019).
3. **(CCF-A) Xiangyu Xu**, Jiadi Yu, Yanmin Zhu, Zhichen Wu, Jianda Li, and Minglu Li, "Leveraging Smartphones for Vehicle Lane-Level Localization on Highways," *IEEE Transactions on Mobile Computing (IEEE TMC)*, 17(8): 1894-1907, (2018).
4. **(CCF-A) Xiangyu Xu**, Jiadi Yu, Yingying Chen, Yanmin Zhu, Shiyu Qian, and Minglu Li, "Leveraging Audio Signals for Early Recognition of Inattentive Driving with Smartphones," *IEEE Transactions on Mobile Computing (IEEE TMC)*, 17(7): 1553-1567, (2018).

Conference Publications

1. **(CCF-A) Xiangyu Xu**, Jiadi Yu, Yingying Chen, Qin Hua, Yanmin Zhu, Yi-Chao Chen, and Minglu Li, "TouchPass: Towards Behavior-irrelevant on-touch User Authentication on Smartphones Leveraging Vibrations," *Proceedings of the ACM MobiCom 2020*, London, UK, 2020.
2. **(CCF-B) Xiangyu Xu**, Jiadi Yu, Yingying chen, Yanmin Zhu, and Minglu Li, "BreathListener: Fine-grained Breathing Monitoring in Driving Environments Utilizing Acoustic Signals," in *proceedings of 17th International Conference on Mobile Systems, Applications, and Services (ACM MobiSys 2019)*, Seoul, Jun, 2019.
3. **(CCF-B) Xiangyu Xu**, Jiadi Yu, Yingying Chen, Yanmin Zhu, and Minglu Li, "SteerTrack: Acoustic-based Device-free Steering Tracking Leveraging Smartphones," in *Proceedings of IEEE International Conference on Sensing, Communication, and Networking (IEEE SECON 2018)*, Hong Kong, Jun 2018.
4. **(CCF-A) Xiangyu Xu**, Hang Gao, Jiadi Yu, Yingying Chen, Yanmin Zhu, Guangtao Xue, and Minglu Li, "ER: Early Recognition of Inattentive Driving Leveraging Audio Devices on Smartphones," in *Proceedings of IEEE International Conference on Computer Communications (IEEE InfoCom 2017)*, Atlanta, GA, USA, May 2017.
5. **(CCF-C) Yi Wu**, **Xiangyu Xu**, Payton R. Walker, Jian Liu, Nitesh Saxena, Yingying Chen and Jiadi Yu, "HVAC: Evading Classifier-based Defenses in Hidden Voice Attacks" *Proceedings of the ACM ASIACCS 2021*, Hong Kong, China, 2021.
6. **(CCF-A) Li Lu**, Jiadi Yu, Yingying Chen, Yanmin Zhu, Minglu Li and **Xiangyu Xu**, "I³: Sensing Scrolling Human-Computer Interactions for Intelligent Interest Inference on Smartphones," *Proceedings of UbiComp 2019*, London, UK, Sept 2019.
7. **(CCF-A) Li Lu**, Jiadi Yu, Yingying Chen, Yanmin Zhu, **Xiangyu Xu**, Guangtao Xue and Minglu Li, "KeyListener: Inferring Keystrokes on QWERTY Keyboard of Touch Screen through Acoustic Signals," in *Proceedings of IEEE International Conference on Computer Communications (IEEE InfoCom 2019)*, Paris, France, Apr 2019.
8. **(CCF-C) Li Lu**, Jian Liu, Jiadi Yu, Yingying Chen, Yanmin Zhu, **Xiangyu Xu** and Minglu Li, "VPad: Virtual Writing Tablet for Laptops Leveraging Acoustic Signals," in *Proceedings of IEEE ICPADS 2018*, Singapore, December 2018.

PATENTS

1. 俞嘉地, 徐翔宇, 朱燕氏, 李明祿, “驾驶员危险行为识别方法及系统”, 2016111167892, 授权, 2017.
2. 俞嘉地, 梁观成, 卢立, 徐翔宇, “用于手部可穿戴设备的基于直拳动作检测的用户认证方法”, 2017103282963, 授权, 2018.
3. 俞嘉地, 徐翔宇, “基于智能移动终端音频装置的车辆方向盘转动追踪方法及系统”, 2017109526586, 授权, 2018.
4. 俞嘉地, 徐翔宇, “基于移动终端音频的驾驶员细粒度呼吸监测方法及系统”, 2018105812969, 授权, 2019.
5. 俞嘉地, 徐翔宇, “基于振动信号的智能终端触碰认证方法及系统”, 2019105831358, 授权, 2020

HONORS AND AWARDS

1. Ph.D. Scholarship for Overseas Alumni (上海交通大学海外校友会博士生奖学金) 2020
2. Joint Ph.D. Training Grant of China Scholarship Council (国家留学基金委联合博士培养资助) 2019
3. Educational Development Fund of Computer Department in Shanghai Jiao Tong University (上海交通大学计算机系 85 届校友教育基金优秀博士生) 2019
4. National scholarship for doctoral student (博士生国家奖学金) 2018
5. Huawei scholarship for doctoral student (博士生华为奖学金) 2017
6. National scholarship (国家奖学金) 2015

PROFESSIONAL SERVICES

- Co-reviewer: IEEE Transactions on Networking; IEEE Transactions on Mobile Computing; IEEE Transactions on Vehicular Technology; IEEE Transactions on Dependable and Secure Computing; ACM MobiCom; ACM Sensys; IEEE ICPADS; IEEE InfoCom; ACM WiSec, etc.
- Student Member: China Computer Federation (CCF), Institute of Electrical and Electronics Engineers (IEEE), Association for Computing Machinery (ACM)