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|  **Lanqing Yang** |  |
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| **Research Area: Mobile Computing (Computer Science)** |
| TEL:  | (+86) 17650565095 | E-mail: | yanglanqing@sjtu.edu.cn |
| Date of Birth: | February. 1994 | Political Status: | Member of Communist Party of China  |
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| **Education** | **Graduation: 2022.12** |

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| **Shanghai Jiao Tong University**  | 09/2017-Now |

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| Ph.D. Candidate, Department of Computer Science |

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| **University of Electronic Science and Technology of China** | 09/2013-06/2017 |

Undergraduate, Department of Software Engineering

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| **Research Projects** |  |  |
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| **Research on Remote Attack on Speech Recognition Systems** | 04/2020-Now |
| **•** | Targeting at attacking on existing SR systems remotely using sounds from nearby power supply. |
| **•** | Led a team of 3 teammates. Experimented CPU modulation schemes to generate human-like sounds, analyzed spectrograms from mobile devices, and employed reinforcement learning to learn CPU modulation parameters adaptively. |
| **•** | Implemented on 10 commercial SR systems, achieved the attack 23 meters away. Corresponding paper is under review of USENIX SECURITY.  |
| **Research on Stealthy Data Leakage in Air-gapped Computers** | 07/2021-02/2022 |
| **•** | Targeting at stealing privacy data from air-gapped (e.g., unconnected to internet) computers. |
| **•** | Led a team of 2 teammates. Experimented on how different CPU modulation factors affect the overall transmission speed. Designed a transmitter and decoder to implement the system. Designed an error correction scheme basing on observations that different frequency bands differ in signal strength and response speed. |
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| **•** | Implemented on commercial mobile devices. Achieved a speed of 2,400 bps, outperformed existing SOTA works by 20x. Corresponding paper has been submitted to INFOCOM 22’. |
| **Research on Appliance Interaction with Appliances Using Mobile Devices** | 07/2020-05/2021 |
| **•** | Targeting at interacting with home appliances using mobile devices (e.g., mobile phones, smart watches) without extra hardware or hardware modifications. |
| **•** | Led a team of 4 teammates. Surveyed the principles of Switching-mode power supply (SMPS), and where the sounds were from. Analyzed the SMPS circuit and proved both different appliances and working states could reflect on collected sounds. Implemented a system to interact with appliances with their SMPS. |
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| **•** | Experimented on 100 commercial appliances. Achieved an identification F1 score of 95%. Corresponding paper has been submitted to MobiSys 22’. |
| **Research on Continuous User Fingerprinting using Electromagnetic (EM) Signals** | 05/2018-05/2020 |
| **•** | Targeting at implementing continuous app/user fingerprint on mobile devices using EM signals. |
| **•** | Collected EM signals with DIY magnetic sensors and surveyed how user operating habits can be affected on EM signals. Designed a scheme to preprocess human movement noises, a FCN-LSTM classifier to identify users. |
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| **•** | Conveyed a user study involving 30 volunteers. Achieved an identification F1 score of 97%. Corresponding paper has been published in INFOCOM 20’. |
| **Research on Non-local Convolutional Neural Networks** | 02/2019-03/2022 |
| **•** | In many multi-channel (spatial-temporal) time series scenarios (e.g., multi-sensor physiological signals analysis), it’s impossible to hold the non-local assumption for CNN. This project targets at proposing new CNN frameworks. |
| **•** | Designed a local-connection mining scheme to extract the spatial-temporal relationship, a spatial-temporal reconstruction scheme to reconstruct the relationship, and a feature extraction scheme to use the relationship. |
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| **Skills** |

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| **•** | Good knowledge of Signal Processing, Machine Learning, Nature Language Processing |
| **•** | Skilled in Python, Tensorflow, Matlab, Spark, Nosql Database and data visualization; |

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| **Awards** |
| **•** | Certificate of Participate in Outstanding Youth Paper Award. 2020/7 |
| **•** | Second Prize of National College Green Computing Competition. 2018/11 |