

LU YAN

Email: Lunaryan1998@gmail.com Website: <https://lunaryan.github.io/>

EDUCATION

Shanghai Jiao Tong University

Undergraduate in Department of Computer Science and Engineering

Shanghai, China

September 2016 – Present

- GPA since Sophomore: 3.75/4.3 Overall GPA: 3.51/4.3
- Zhiyuan Honors Program of Engineering

RESEARCH EXPERIENCE

Neural Networks Guided Fuzzing Framework

Jul. 2019 – Sept. 2019

Advisor: Prof. Suman Jana

Columbia University

- Measured and compared the branch distance variation during the fuzzing process of American Fuzzy Loop (AFL) and our framework, providing compelling evidence in support of our method
- Assessed the reasons behind the outstanding performance of our method by ablation study of the benefits offered by seed selection and adaptive loss (two mutation strategies we proposed)
- Submitted a paper to the 42nd International Conference on Software Engineering (ICSE'20)

Android Apps' Privacy Leakage Risk Evaluation

Dec. 2018 – Jul. 2019

Advisor: Prof. Haojin Zhu

Shanghai Jiao Tong University

- Proposed benign Apps with similar functions utilize common limited permission combinations while malwares tend to require more permissions independent of their functions, evaluated it by finding frequent term sets
- Established correspondence between Apps' requested permissions and private information listed in their privacy policies, based on which introduced a new metric to evaluate privacy leakage risk of Android Apps

Dynamic Traffic Feature Camouflaging via GANs

Jun. 2018 – Jul. 2018

Advisor: Prof. Haojin Zhu

Shanghai Jiao Tong University

- Analyzed network flows using dpkt framework and identified each flow with 4-tuple (source address, source port, destination address, destination port)
- Transformed traffic data into normalized feature vectors; compared the effect of different generator and discriminator network structure on training result

PUBLICATION

Jie Li, Lu Zhou, Huaxin Li, **Lu Yan** and Haojin Zhu "Dynamic Traffic Feature Camouflaging via Generative Adversarial Networks", in IEEE Conference on Communications and Network Security (CNS'19)

SELECTED COURSE PROJECTS

Machine Learning (taught by Prof. Quanshi Zhang) [\[report\]](#)

- Created positive and negative training/test samples from [FDDDB dataset](#), trained logistic regressor, Fisher model, SVM with 3 kernels, Xgboost, AdaBoost, and CNN for binary classification
- Designed and implemented a new face detection method utilizing morphological transformation operations, beating state-of-the-art selective search algorithm when combined with SVM classifiers on test set
- Analyzed and visualized features with PCA and t-SNE; personal project report achieved the highest recognition among all projects presented in the class

Computer Networks (taught by Prof. Na Ruan) [\[report\]](#)

- Proposed the combination of Graph Neural Networks (GNN) and Generative adversarial Nets (GAN) to detect Sybil users in social networks
- Evaluated our method against 8 traditional ML models in [Cora](#) and real-world [Dianping](#) dataset, achieving $2.27\times$ and $1.61\times$ accuracy compared to KNN respectively

HONORS & SCHOLARSHIPS

- Zhiyuan Honors Scholarship, Shanghai Jiao Tong University (top 5%)
- Zhiyuan Honors Research Program, Shanghai Jiao Tong University (The **only** EECS project out of 8 projects funded in 2018)

ADDITIONAL INFORMATION

- **Standardized Tests:** TOEFL: 99 (R: 30, L: 25, S: 22, W: 22) GRE: 322 (V: 152, Q: 170) + 3.5
- **Volunteer Experience:** International Volunteer teacher in Cambodia (2017) and Indonesia (2018)
- **Hobbies:** Traditional Chinese folk dance, Calligraphy