LU YAN

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EDUCATION

Shanghai Jiao Tong University Shanghai, China
Undergraduate in Department of Computer Science and Engineering September 2016 – Present

- Overall GPA: 84.43/100 GPA since Sophomore: 87.55/100
- Zhiyuan Honors Program of Engineering

RESEARCH EXPERIENCE

Neural Networks Guided Fuzzing Framework July 2019 – Present
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)
- Composed and submitted a paper to the 42nd International Conference on Software Engineering (ICSE'20) as third author

Android Apps' Privacy Leakage Risk Evaluation May 2019 – Present
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 June 2018 – July 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 FDDB 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× and 1.61× 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)
- **Interest**: Traditional Chinese folk dance, Calligraphy