Qian Han

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Education

Dartmouth College, Department of Computer Science, Hanover, NH — Sep. 2016 – Jun. 2021(*expected*)
Ph.D. student in **Computer Science**

Telekom Innovation Labs, Be'er Sheva, Israel — Jun. 2019 – Sep. 2019
Research Intern

Tsinghua University, Department of Electronic Engineering, Beijing, China — Aug. 2012 – July. 2016
Bachelor of Engineering in Electronic Engineering

Publications

Generating Fake Documents using Probabilistic Logic Graphs — Jun. 2019
***Q. Han**, C. Molinaro, A. Picariello, G. Sperlì, V.S. Subrahmanian, Y. Xiong*
Submitted to IEEE Transactions on Dependable & Secure Computing

Android Rooting Malware Detection via Robust Irreversible Feature Transformations — May. 2019
***Q. Han**, V.S. Subrahmanian and Y. Xiong*
Submitted to IEEE Transactions on Information Forensics and Security

Disclose or Exploit? A Game Theoretic Approach to Strategic Decision Making in Cyber Warfare — Apr. 2019
*H. Chen, **Q. Han**, S. Jajodia, R. Lindelauf, V.S. Subrahmanian, Y. Xiong (authors listed in alphabetic order)*
Submitted to IEEE System Journals

DBank: Predictive Behavioral Analysis of Recent Android Banking Trojans — Apr. 2019
*C. Bai, **Q. Han**, G. Mezzour, F. Pierazzi, and V.S. Subrahmanian (authors listed in alphabetic order)*
IEEE Transactions on Dependable & Secure Computing, 2019

Frictio: Passive Kinesthetic Force Feedback for Smart Ring Output — Jul. 2017
*T. Han, **Q. Han**, M. Annett, F. Anderson, D. Huang, and X. Yang*
In Proceedings of the ACM Symposium on User Interface Software and Technology (UIST'17), Denver, CO

Simultaneous Multi-Channel Reconstruction for TDS-OFDM Systems — Sept. 2015
***Q. Han**, W. Shen, and B. Wang*
In Proceedings of the 2015 IEEE 82nd Vehicular Technology Conference (VTC2015-Fall)

Research Experience

Generative Adversarial Malware Model for Android
supervised by Yuval Elovici and Rami Puzis, Telekom Innovation Labs
- Designed Android centric attack on well-known Android malware classifiers using static features; proposed a mechanism to harden the state-of-the-art classifiers including deep neural network to reduce the impact of the attack.

Android Banking Malware Prediction and Analysis Using Machine Learning
supervised by Prof. V.S. Subrahmanian, Dartmouth College
- Proposed novel *Suspicion Score* and *Suspicion Rank* features based on PageRank; enhanced the system's robustness around 300% in the face of adversary attack; achieved classification results with AUC over 99.5%; found 2 previously unlabeled Banking Trojans, as confirmed by ***Google Android Security Team***.

ECC: Ensemble Clustering and Classification Algorithm for Unbalanced Dataset
supervised by Prof. V.S. Subrahmanian, Dartmouth College
- Designed ECC algorithm synthesized training data to reduce the imbalance ratio on datasets; achieved around 10% and 20% higher AUC and Recall, respectively.

Passive Kinesthetic Force Feedback for Smart Ring Output
supervised by Prof. Xing-Dong Yang, Dartmouth College
- Designed 3D printed smart-ring prototype; used the prototype to play Angry Birds successfully.

Invited Talks

Clustering & Classification Methods for Predicting Malicious Android Apps — Oct. 2018
Conference on Android Security, Local Research Day, **Google HQ**, Mountain View, CA
***Q. Han** and V.S. Subrahmanian*

Behavioral Analysis and Automated Detection of Android Banking Trojans — Jul. 2018
Android Security Team, **Google HQ**, Mountain View, CA
***Q. Han** and V.S. Subrahmanian*

Awards

Dartmouth College Graduate Alumni Research Award, 2019
Dartmouth College Neukom Prize for Outstanding Graduate Research, 2019
Tsinghua University Distinguished Undergraduates Thesis Award, 2016
First Prize of National College Students Science and Technology Innovation Project, 2015
Tsinghua University Science and Technology Innovation Scholarship, 2014

Tools

Python, MATLAB, Java, Linux, LATEX, Android, Git, Pandas, Scikit-learn, Networkx, PyTorch, Keras