
EDUCATION

- **Shanghai Jiao Tong University** Shanghai, China
Undergraduate, School of Electronic Information and Electrical Engineering *Sept. 2016 – Present*
 - **Major:** Computer Science & Technology, **GPA:** 3.94/4.30 (90.86/100), **Ranking:** 2/95
 - Zhiyuan Honors Program of Engineering: an elite program for top 5% students
 - IEEE Honor Class: an elite class for top students, referring to MIT's educational model

PROFESSIONAL SKILLS

- Computer architecture, Algorithms, Data structure, Machine Learning, Computer network, and Cryptography
- Programming languages: C/C++ (Proficient), Python (Competent), Java (Competent)

PUBLICATIONS

No-Jump-into-Latency in China's Internet! A Hop Count Based IP Geo-localization Approach

- Accepted by IEEE/ACM International Symposium on Quality of Service (IWQoS 2019)

SELECTED RESEARCH PROJECTS

- **Privacy-Preserving TEE on a Service-oriented Environment** *Jun. 2019 – Nov. 2019*
Advisor: Prof. Xiaofeng Wang *Indiana University Bloomington*
 - Protected software privacy of service provider by implementing a procedure which dynamically loads executable binary code into the reserved memory space of an initialized enclave
 - Applied Intel SGX remote attestation protocol to a new scenario where user establishes trust to the enclave hosted by service provider, as the foundation to build a complete trust chain
 - Enabled a secure data transmission channel between user and the enclave hosted by service provider based on remote attestation
- **Attribute Inference Attacks Against Machine Learning Models** *Feb. 2019 – Jun. 2019*
Advisor: Prof. Minhui Xue *The University of Adelaide*
 - Proposed a new attribute inference attack to reconstruct missing values in a machine learning data set via exploiting membership information from a trained model
 - Formalized two definitions of attribute inference success rate metrics for different attack scenarios
 - Estimated the new method across various data sets in terms of two proposed metrics
 - Analyzed the interplay between membership inference and attribute inference with extended experiments to reason about the novel observations in our evaluation
- **Hop Count Based IP Geo-localization in China's Internet** *Jun. 2018 – Oct. 2018*
Advisor: Prof. Haojin Zhu *Shanghai Jiao Tong University*
 - Exploited hop count instead of RTT for distance estimation to address the problem of poor correlation between latency and physical distance in China's Internet
 - Estimated service radius for each provincial router and fitted a mapping from hop count to physical distance between IPs within the same province
 - Geo-localized the target IP to the location of its nearest landmark and achieved an estimation error within ten kilometers for 65% of 48,874 targets

HONORS AND AWARDS

- 2017 Jin Long Yu Scholarship, Shanghai Jiao Tong University (only 3 awarded students in the School of EECS)
- Zhiyuan Honors Scholarship, Shanghai Jiao Tong University (top 5%)
- Zhiyuan Honors Research Program, Shanghai Jiao Tong University
 - Project Topic: Adversarial Deep Learning and Its Applications in Internet of Things
 - The only EECS project out of 8 projects funded in 2018

EXTRACURRICULAR ACTIVITIES

- Volunteering Experiences
 - ACM TURC 2018 volunteer, served as conference recorder
 - Shanghai International Marathon volunteer, in both 2018 and 2019

No-Jump-into-Latency in Chinas Internet! A Hop Count Based IP Geo-localization Approach

- Chong Xiang, **Xinyu Wang**, Qingrong Chen, Minhui Xue, Zhaoyu Gao, Haojin Zhu, Cailian Chen, and Qiuhua Fan
- **Proceeding:** Proceedings of the International Symposium on Quality of Service Article No. 42
- **Patent:** CN201910603154.2, a hop count-based IP geo-localization approach
- **Access:** <https://nsec.sjtu.edu.cn/~chongxiang/pdf/IWQoS2019.pdf>
- **Citation:** Xiang Chong, Xinyu Wang, Qingrong Chen, Minhui Xue, Zhaoyu Gao, Haojin Zhu, Cailian Chen and Qiuhua Fan. “No-jump-into-latency in China’s internet!: toward last-mile hop count based IP geo-localization.” IWQoS (2019).
- **Abstract:** Last-mile geo-localization plays an essential role in many location-based services, such as fraud detection and targeted advertising. In this study, we point out that round trip time (RTT) latency shows an extremely weak correlation with physical distance estimation in China’s Internet, since a path between a vantage point and a destination can often be circuitous and inflated by queuing and processing delays. To sidestep the latency measurement, we perform a three-tier hop count based IP geo-localization mapping for China’s Internet, on the assumption that each provincial router only serves a limited area. The mapping approach begins at the first tier using a single vantage point to fetch large-scale traceroute paths from the server to landmarks and target IPs. At the second tier, we try to find the last common routers along the traceroute paths of targets and landmarks and aggregate their hop count distances. At the third tier, we estimate the physical distances from hop count distances and provincial router radii, and geo-localize the targets to the nearest landmarks. Through large-scale experiments, we show that our approach is both cost-efficient and reliable, and can achieve last-ten-kilometer IP geo-localization for approximately 65% of the total 48874 pingable target IP addresses with a single ping server, and our hop count based approach completely outperforms the RTT based method.