MINGKAI LI

Undergraduate Student

EDUCATION

2019 – present **University of Science and Technology of China** **B.Eng in Computer Science**
GPA: 3.65/4.30 (87.45/100), Major GPA: 3.83/4.30
TOEFL: 102 (R 29, L 25, S 22, W 26)
Research Interest: Computer Security

Course highlights: Analog and Digital Circuits (90/100), Introduction to Computer Systems (96/100), Computer Organization and Design (93/100), Operating Systems (93/100), Mathematical Logic (93/100), Compiler (91/100), Formal Methods (98/100), Computer Security (96/100), Artificial Intelligence (91/100)

EXPERIENCE

06/22 – present **University of Science and Technology of China** **Research Intern**
Cyberthreat Hunting and Security Engineering Lab (ChaseLab)
Mentor: Xianghang Mi

PROJECTS

Research Project **A preliminary experiment to measure the distinction between residential and cloud network in terms of cyberthreats using honeypots** **06/22 – 09/22**
Mentor: Xianghang Mi, All-in-one Notes: honeypot
At the beginning of the experiment, we expected that honeypots on residential networks are likely to attract more attackers and collect more valuable information about real-world cyberthreats, since some attackers will intentionally avoid the attacks towards cloud networks as shown in previous researches, e.g. MobiSys '19. In our preliminary experiment, we deployed honeypots on HUAWEI Cloud and some ADSL VPS vendors respectively exposing SSH (port 22) and Telnet (port 23) to attackers. We measured the collected IP addresses in terms of their /8, /16, /24 prefixes, countries, ASN numbers and the size of intersection set between the cloud and the residential counterpart. As a result, we captured 10 malicious files which were for the first time sent to VirusTotal. However, the measured distinction between the cloud and residential networks were not as big as we have expected, and we cancelled any further investigations.

Course Project **Cminus-f compiler implementation** **2021 Fall**
Course Instructor: Cheng Li, Code on GitHub
(a) Cminus-f is a self-defined simplified version of the C programming language; (b) Lexical analyzer using flex and syntax analyzer using bison; (c) LLVM IR generation using LightIR API provided by the experiment framework; (d) Optimization pass implementation, including constant propagation, dead code elimination and loop-invariant code motion; live variable analysis.

Course Project **Toy experiments using Z3 solver, NuSMV and Coq** **2022 Spring**
Course Instructor: Wenchao Huang, Code on GitHub
Several experiments on SMT problems, model checking (main) and formal verification.

For other projects, please refer to my GitHub repositories.

CONTACT

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