HAOBIN CHEN

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EDUCATION

Nankai University, Tianjin, China *2019-2023(Expected)*
B.Sc in Information Security

Overall GPA: 3.67/4.0(87.78%, Top 10%)

Core Courses

Data Structures (4.0/4.0), Java Programming Language (4.0/4.0), High-Level Programming Language (C++, 4.0/4.0), Operating System (4.0/4.0), Computer Organisation and Design (4.0/4.0), Database System (4.0/4.0), Cryptography (4.0/4.0), Security Protocols and Its Design (4.0/4.0), IoT Security (4.0/4.0)

RESEARCH INTERESTS

Computer Security; Data Privacy; Applied Cryptography; Security Protocols

RESEARCH EXPERIENCES

Hybrid Protection for Data Privacy September 2020 -
Advised by: Prof. Zheli Liu *Nankai University & Huawei Inc., Tianjin, China*

- Designing more advanced cryptographic primitives including oblivious RAM, oblivious data structures as the storage engine for relational databases.
- Designing searchable encryption for cloud storage.
- Collaborating with Huawei Inc. in making theoretical models and encryption schemes practical and viable in real-world products.
- Proposed novel ORAM constructions with the support of Intel SGX technology.
- Proposed novel encryption schemes for encrypted databased with frequency-smoothing technique.
- Learning techniques of multiple party computation (MPC).

Intelligent Service Platform for Residential Communities March 2021 - Dec 2021
Advised by: Prof. Peng Mie *Donghui Dongrui Community, Tianjin, China*

- Aiming at solving the real-world problems faced by communities consisting of senior residents.
- Developing an online platform that provides residents with one-stop services to make their lives more convenient.
- Focusing on deploying the encrypted database as the data storage and secure encryption schemes to ensure data privacy for sensitive information.

TECHNICAL STRENGTHS

Website	HTML5, CSS, JavaScript, and Bootstrap
Typesetting Document	Latex, Markdown
Programming	C/C++ (Proficient), Makefile, CMake, Shell, Java, Python, PHP, Bash
Frameworks	Google Remote Procedure Call (gRPC), Intel Software Guard eXtension (SGX), Yii2, SpringBoot, Yara, Yacc & Bison
Platforms	Linux Programming (proficient) and shell commanding
Softwares	Git, IDA Pro, OllyDbg, WinDbg, LLVM

HONORS AND AWARDS

2021 The 3rd prize at the **National College Student Information Security Contest**, Shandong University (Highest undergraduate contest for information security$< 8\%$)

2021 **Nankai Excellent Community Immersion Project** ($< 10\%$)

2021 **Nankai Academically Excellent Student Scholarship** (Awarded to undergraduate students with excellent academic performance, $< 5\%$)

2021 **Nankai Innovation Award of Technology and Research Scholarship** (Awarded to undergraduate students with outstanding research potential, $< 3\%$)

TALKS

1 **Introduction to Zerocoin: An Anonymous and ZKP-Based E-Cash from Bitcoin**
Present at course CSSE0014 *Security Models*

2 **How Does the Compiler Work: A Brief Introduction to the LLVM Framework**
Present at course COSC0017 *Compilers Design*

3 **Introduction to the Encrypted Databases**
Present at course UPEC0990 *Database and Its Applications*

4 **The Linux Kernel Fuzzing**
Present at course CSSE0004 *Software Security*

PROJECTS

1 FH-CryptDB (Frequency-smoothing encrypted database).
Link: `https://github.com/hiroki-chen/FH_cryptDB`

2 SSE-SEAL: An implementation of the paper *Demertzis et al. SEAL: Attack Mitigation for Encrypted Databases via Adjustable Leakage*.
Link: `https://github.com/hiroki-chen/SSE-SEAL`

3 SO_2: A recursive doubly oblivious RAM model based on Intel SGX technology.
Link: `https://github.com/hiroki-chen/SGXOram`

4 Partial implementations for inference attacks against encrypted databases.
Link: `https://github.com/hiroki-chen/FrequencyAttack`

5 A compiler for SysY (a C-like language).
Link: `https://github.com/hiroki-chen/NKUCompiler`

6 (Under construction) Kaleidoscope: A toy compiler for a python-C-mix language based on the LLVM and Bison.
Link: `https://github.com/hiroki-chen/LLVMCompiler`

7 Grassroots community intelligent service platform. In **Nankai Innovation Research Project**.

LANGUAGE SKILLS

iBT-TOEFL (Reading: 30, Listening: 27, Writing: 27, Speaking: 27)

GRE (Verbal Reasoning: 162, Quantitative Reasoning: 168, Analytical Writing: 4)