

CONTACT
INFORMATION

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RESEARCH
INTERESTS

Software Security, Software Verification, Software Engineering

EDUCATION

Georgia Institute of Technology
 Ph.D. in Computer Science
 Adviser: Taesoo Kim

Georgia, USA
Aug, 2020 - Present

National Chiao Tung University
 B.S. in Computer Science

Hsinchu, Taiwan
Sep, 2015 - Jan, 2019

ACADEMIC
EXPERIENCE**Academia Sinica***Research Assistant*

Advisers: Bow-Yaw Wang, Bo-Yin Yang

- Verify cryptographic programs
 - Design and implement a GCC plugin named GCC2CRYPTOLINE that translate GCC's intermediate representation – GIMPLE to CRYPTOLINE – DSL used to verify cryptographic programs.
 - Verify several functions in well-known industrial cryptographic libraries including OpenSSL, BoringSSL, NaCl, wolfSSL, and Bitcoin's libsecp256k1.
 - Found a bug in NaCl and reported it to the developer.
 - Present(Oral) the work at ACM CCS 2019 in London, UK. [1]
- Help certify cryptoline verifier by Coq.
 - Help certify bit blasting algorithm for SMT QFBV theory.

Taipei, Taiwan
Oct, 2018 - May, 2020

Summer Research Intern

Adviser: Bow-Yaw Wang

- Design and implement a privacy protection system using Ethereum, IPFS, Python.
- Design and implement a web app used to interact with the Ethereum-based privacy protection system using MetaMask, React, JavaScript.

Jul, 2018 - Aug, 2018

National Chiao Tung University*Undergraduate Research*

Adviser: Shih-Kun Huang

- Survey AEG (automatic exploit generation) and angr.
- Employ angr and pwntools to implement a tiny AEG tool.
- Present in the final of undergraduate research competition.

Hsinchu, Taiwan
Feb, 2018 - Jan, 2019

PUBLICATIONS

Signed Cryptographic Program Verification with Typed CryptoLine

Yu-Fu Fu, Jiayang Liu, Xiaomu Shi, Ming-Hsien Tsai, Bow-Yaw Wang, Bo-Yin Yang
ACM Conference on Computer and Communications Security

CCS 2019

(AC rate: 16%)

HONORS AND
AWARDS (SELECTED)

Academic Achievement

- **Academic Achievement Award** * 7 - NCTU CS Dept.
 Awarded to Top 5% students in one semester. Awarded in **all** semesters.

Hsinchu, Taiwan

Problem Solving & Capture The Flag Contest

- **Finalist 12th** in team BFS - DEFCON CTF 26 Final
 - **Silver Medal** - ACM ICPC 2017 Asia Hua-Lien Regional Contest
 - **Honorable Mention** - ACM ICPC 2017 Asia Jakarta Regional Contest
 - **14th Place** – National Collegiate Programming Contest
- Las Vegas, USA
Hua-Lien, Taiwan
Jakarta, Indonesia
Taipei, Taiwan

EXTRACURRICULAR **NCTU CS Computer Center**

Teaching Assistant

- PC team: maintained computers in the department.
- BSD team: maintained FreeBSD workstations.
- WWW team: developed and maintained department websites.
- Helped students and faculties solve software and hardware problems.

Hsinchu, Taiwan
Jul, 2017 - Jul, 2018

NCTU Programming Competition Contest Association

Member

- Practiced for algorithm contests including national contests and ACM ICPC.
- Hold summer/winter camps targeting high school students.

Hsinchu, Taiwan
Feb, 2016 - Jul, 2018

NCTU Cyber Security Club

Network Administrator & Lecturer

- Taught web security about HTTP, XSS, CSRF.
- Maintained servers hosted at Linode.
- Attended CTFs in team Bamboofox.

Hsinchu, Taiwan
Sep, 2016 - Jun, 2019

CONFERENCE

- **Speaker** - ACM CCS 2019

London, United Kingdom

MEMBERSHIP

- **Member** - ACM

COMPUTER SKILLS

- Languages: C/C++, Python, JavaScript, OCaml, shell script, basic SQL
- Proof Assistant: Coq
- Applications: Git, Vim, Emacs, L^AT_EX
- Operating Systems: Linux, FreeBSD, macOS, Windows