

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. [2]
- Help certify cryptoline verifier by Coq.
 - Help certify bit blasting algorithm for SMT QFBV theory. [1]

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

CoqQFBV: A Scalable Certified SMT Quantifier-Free Bit-Vector Solver

Xiaomu Shi, **Yu-Fu Fu**, Jiaxiang Liu, Ming-Hsien Tsai, Bow-Yaw Wang, Bo-Yin Yang
International Conference on Computer-Aided Verification

CAV 2021

Signed Cryptographic Program Verification with Typed CryptoLine

Yu-Fu Fu, Jiaxiang 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)	<p>Academic Achievement</p> <ul style="list-style-type: none"> ● Academic Achievement Award * 7 - NCTU CS Dept. Awarded to Top 5% students in one semester. Awarded in all semesters. <p>Problem Solving & Capture The Flag Contest</p> <ul style="list-style-type: none"> ● 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 	<p>Hsinchu, Taiwan</p> <p>Las Vegas, USA Hua-Lien, Taiwan Jakarta, Indonesia Taipei, Taiwan</p>
EXTRACURRICULAR	<p>NCTU CS Computer Center <i>Teaching Assistant</i></p> <ul style="list-style-type: none"> ● 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. <p>NCTU Programming Competition Contest Association <i>Member</i></p> <ul style="list-style-type: none"> ● Practiced for algorithm contests including national contests and ACM ICPC. ● Hold summer/winter camps targeting high school students. <p>NCTU Cyber Security Club <i>Network Administrator & Lecturer</i></p> <ul style="list-style-type: none"> ● Taught web security about HTTP, XSS, CSRF. ● Maintained servers hosted at Linode. ● Attended CTFs in team Bamboofox. 	<p>Hsinchu, Taiwan Jul, 2017 - Jul, 2018</p> <p>Hsinchu, Taiwan Feb, 2016 - Jul, 2018</p> <p>Hsinchu, Taiwan Sep, 2016 - Jun, 2019</p>
CONFERENCE	<ul style="list-style-type: none"> ● Speaker - ACM CCS 2019 	<p>London, United Kingdom</p>
MEMBERSHIP	<ul style="list-style-type: none"> ● Member - ACM 	
COMPUTER SKILLS	<ul style="list-style-type: none"> ● 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 	