Tianyi Gao

CONTACT INFORMATION
Informatics Forum, 10 Crichton Street
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INTERESTS

Computer Networks and Operating Systems

EDUCATION

University of Edinburgh — Edinburgh, UK
Ph.D. in Informatics — Dec. 2022 - Present

- Supervisor: Michio Honda

University of Edinburgh — Edinburgh, UK
M.S. in Computer Science, **Distinction** — Sept. 2021 - Nov. 2022

- Rank: Top 1 (Class Prize awarded)
- Thesis: Securing the Homa Transport Protocol (Outstanding Thesis)
- Key Courses: Computer Architecture and Design, Parallel Architecture, Security Engineering, Extreme Computing, Advanced Database Systems, Machine Learning Practical

University of Nottingham — Ningbo, China & Nottingham, UK
B.S. in Computer Science w. Artificial Intelligence, **1st Class** — Sept. 2017 - August 2021

COMPUTER SKILLS

Programming Languages
(Proficient) C; (Competent) Python, Java; (Beginner) C++, Rust, GoLang, Solidity, Scala, SQL, Verilog

Tools & Software
Linux System Administration, Bash, GNU Make, Git, LaTeX, Docker, PyTorch

HONORS, AWARDS, SCHOLARSHIPS

Computer Science MSc Class Prize (Highest Overall Mark), University of Edinburgh	2022
Informatics Graduate School PhD Scholarship *(GBP £145,838)*, University of Edinburgh	2022
Nottingham Advantage Award, University of Nottingham	2021
4th at the UoN Programming Contest, University of Nottingham	2019
Vice-Chancellor's Medal (Xiaoshan UNNCer Team), University of Nottingham	2019
Dean's List *(CNY ¥6,000)*, University of Nottingham	2019
Head's List *(CNY ¥3,000)*, University of Nottingham	2018
Outstanding Volunteer, University of Nottingham	2018

PUBLICATIONS

Tianyi Gao, Xinshu Ma, Suhas Narreddy, Eugenio Luo, Steven W. D. Chien, and Michio Honda, *"Designing Transport-Level Encryption for Datacenter Networks"*, In Proceedings of the 9th Asia-Pacific Workshop on Networking (APNet), Aug 2025.

Shuo Li*, Steven W. D. Chien*, **Tianyi Gao**, and Michio Honda, *"Remote TCP Connection Offload with XO"*, In Proceedings of the 9th Asia-Pacific Workshop on Networking (APNet), Aug 2025.

TALKS

HomaLS: Tunneling Messages through Secure Segments — [Web] [Video] [Slides]
Netdev 0x16, The Technical Conference on Linux Networking — Lisbon, Portugal

TEACHING

Computer Communications and Networks 2024-25, University of Edinburgh — Teaching Assistant
Computer Communications and Networks 2023-24, University of Edinburgh — Teaching Assistant

WORKING EXPERIENCE

Advanced Institute of Information Technology, Peking University — Hangzhou, China
System Software Engineer, ***Internship*** — June 2020 - Nov. 2020

- Improved the Groth16 algorithm efficiency using three techniques: 1. NUMA affinity optimization and removal of unnecessary security features; 2. Code optimization and sparse array compression; 3. Integration of the state-of-the-art GPU computation algorithm on the mathematical operator (multi-exp) Proof generation decreased from 52 minutes to 22 minutes, and physical memory footprint decreased from 190 MiB to 80 MiB on E5-2678v3x2 machines;
- In the project of developing a platform for place and route (P&R) processing with Electronic Design Automation (EDA) tools, I developed an agent software in GoLang, which receives jobs, and launches EDA tools and uploads the results to file servers. That agent is currently being used in production;

(Supervised by Professor Guangyu Sun)