

EDUCATION

- University of Minnesota - Twin Cities**

Minneapolis, MN

PhD student in Computer Science - Center for Research of Intelligent Storage
Aug. 2018 – Jun. 2023 (expected)
- National Chiao Tung University**

HsinChu, Taiwan

Master of Science in Computer Science Cryptanalysis Lab
Sep. 2010 – Jun. 2012
Bachelor of Engineering in Electrical and Electronics & Computer Science
Sep. 2006 – Jun. 2010

SELECTED RESEARCH PROJECTS

- Distributed Data Deduplication in IoT-Edge-Cloud Environment (ongoing):** Design a distributed data deduplication system on edge servers for IoT data backup workload to cloud datacenter, aiming for early deduplication to reduce network traffic.
- Zoned Namespace SSD (ongoing):** Integrate zone concept into NVME SSD simulator.
- Data Deduplication on DNA Storage (ongoing):** Design chunk allocation scheme on long-term DNA storage.
- Re-encryption of Archival Data on DNA Storage (future):** Propose encryption and decryption algorithms for DNA storage to protect archival data.
- Deep Neural Network Hyperparameter Optimization:** Developed a genetic algorithm to automatically tune hyperparameters for Deep Neural Network training.
- Distributed Deep Neural Network Training:** Deployed Horovod framework to train distributed deep neural network with cifar-100 image dataset on 4 NVidia 1080 graphic cards.
- Public-Key Searchable Encryption with Conjunctive Queries:** Designed a public-key cryptosystem that enables keyword search over conjunctive queries. (Master's thesis.)

WORK EXPERIENCE

- Industrial Technology Research Institute**

Hsinchu, Taiwan

Research Engineer
Oct. 2017 - May. 2018

 - Studied genetic algorithm on hyperparameter tuning for Deep Neural Network:** Applied hyperparameter optimization in deep learning training using genetic algorithm. Improved training time by 5%.
- VIA Technologies, Inc.**

Taipei, Taiwan

Senior Software Engineer
Oct. 2012 - Oct. 2017

 - Cryptography Project:** Extracted OpenSSL crypto algorithms into a standalone library for CPU validation.
 - Smart Home embedded system:** Led a 5-member team to developed a integrated intercom system.
- Cloud Computing Centre, Industrial Technology Research Institute**

HsinChu, Taiwan

Fulltime Internship
Jun. 2011 - Aug. 2011

 - Security-Enhanced Linux:** Developed log monitor system to alert potential infiltration of cloud OS in python.
- National Chiao Tung University**

HsinChu, Taiwan

Research and Teaching Assistant
Sep. 2010 - Jun. 2012

 - Research Assistant - Elliptic curve cryptography:** Explored elliptic curve pairings cryptosystems.
 - Teaching Assistant - Introduction to Cryptography:** Was fully responsible for projects and grading.

PROGRAMMING SKILLS

- Languages:** : C/C++ (advanced), Java (advanced), Python (intermediate)
- Tools:** : Git, OpenSSL, vim, VScode, Android, Matlab, TensorFlow, Horovod

VOLUNTEER EXPERIENCE

- Contributor:** : contributed to StackOverflow community in Cryptography, OpenSSL, Big Number.
- Lecturer:** : gave a lecture at Girls Who Code camp at University of Minnesota.
- Lifeguard:** : joined Red Cross Taiwan to secure water safety at rivers around New Taipei City.