
EDUCATION

- **The Hong Kong University of Science and Technology** SaiGon, HK
Master of Science - Electronic and Computer Engineering, Telecommunications (Network Topology) 2019.08 - 2020.11
Admission Scholarship. Data Analyst under Prof. K.S. WONG with self-build Machine Learning system.
Visiting Scholar - National Taiwan University / Technische Universiteit Delft
Advised by Prof. Lydia Chen and co-advised by Dr. Y-A Pignolet(Industry) on social media fair learning task.
- **National Taiwan University of Science and Technology** Taipei, TW
Bachelor of Science - Electrical Engineering (Information and Communication Group) 2014.09 - 2018.06
Average GPA: 3.73/4.0, NTUST Outstanding Youth Awards (top 1%). Valedictorian of Graduation Ceremony.

EXPERIENCE

- **Cisco Systems, Inc.** Taipei, TW
Fulltime ASIC Design Verification Engineer 2022.07 - present
 - Designing UVM/SystemVerilog test benches and enhancing existing test benches.
 - End-to-end verification of various design blocks and Contributing to top-level verification.
 - Be a part of emulation testing efforts and participate in the ASIC bring-up.
- **Siemens EDA (Siemens Digital Industries Software)** Taipei, TW
Fulltime Verification-IP Engineer (Former Avery System Design) 2021.07 - 2022.07
 - Take charge of I2C/I3C(HCI)/SMBus related product. (pure SystemVerilog/UVM-based project)
 - Support customer's integration issue on DUT slave/master without the language barriers/timezone issue.
 - Support customized requirement as the I2C/SMBus wrapped product also support the UVM integration.
 - Hold the training seminar on I2C/SMBus wrapper product for foreign customer and company's colleague.
 - Build up the UVM environment from scratch and establish an independent study group company-wise[1]:
 - Base on the familiar protocol, Ethernet, with the UVM and hold the study group biweekly.
 - Build up the I2C and SMBus wrapped VIP with existing Avery proprietary product.(UVM-based)
- **Foxconn Industrial Internet** Shenzhen, CN
Fulltime Data Software Engineer (Infrastructure Development) 2020.09 - 2021.7
 - Developed the main feature - Time Varied Scatter Plot. (Data Visualization/System Integration)
 - Integrated into the giant system within two months by Javascript
 - Visualized the system information with D3J with senior backend engineers.
 - Took charge of the Work Order System, micro-service, in python[2], including:
 - Realtime data analytic and system integration and present with CI/CD process
 - Data analysis and Machine Learning prediction and visualized with its own fullstack interface.
- **Institute of Information Science, Academia Sinica** Taipei, TW
Fulltime Contract Research Assistance 2020.04 - 2020.08
 - "On Influencing the Influential: Disparity Seeding", focusing on Graph Theory, Centrality Measurement
 - Hands on experience of SDN environment setup with bare metal server and mininet for simulation, and led 2 master students with data-center debugging/trouble-shooting, leveraging some basic concepts on networking.

SIDE PROJECTS AND COMPETITIONS

- **Ethernet Verification-IP with test case under UVM** Taipei, TW
Programmer/Lecturer (Avery Design System) 2021.7 - present
 - Self-motivated project in order to learn UVM methodology with the familiar protocol. As a big fans of "Teaching is the best teacher of learning". Hold a bi-weekly workshop in English company-wise.

- **Online Gaming Prediction Tools**

Taipei, TW

Tech Lead: Startup Project with Alumni in The Hong Kong University of Science and Technology 2020.4 - present

- This is a total solution including Mobile Application(Ionic-TypeScript) fitting in iOS and Android, full-Stack server(CodeIgnitor PHP), and third-party payment system(PHP).

- **E-Learning - Mobile App of improving child's concentration on curricular study**

SaiGon, HK

Data Analyst: Hong Kong Science and Technology Parks (Prof. K.S. WONG) 2019.10 - 2020.06

- Adopted child's emotion and eye tracking information into server, and built up the machine learning pipeline with real-time results[3].

RESEARCH EXPERIENCE

- **On Influencing the Influential: Disparity Seeding.**

Taipei, TW

Advised by Prof. Lydia CHEN, Dr. Y-A Pignolet and Prof. De-Nian, YANG in Academia Sinica 2020.04 - 2020.06

- We characterized the effect in social networks from the aspect of single and multi hops. Further, we extended this problem to the influence maximization task by simulating with the diffusion model.

- The result is shown in the demo website to illustrate the ideas, and written in conference paper format.

- **Cloud Gaming Traffic Congestion Detection and Simulation.**

SaiGon, HK

Master Thesis at The Hong Kong University of Science and Technology 2019.11 - 2020.08

- Focused on the resource hungry application, Cloud Gaming, and simulate the congestion with Advance Queue Management(AQM) under the testbed Network Simulation ver3. (ns3)[4].

SKILLSETS AND ABILITIES

- **Skilled:** SystemVerilog, Python, Shell Script, Docker, Micro-service, Server-setup(apache, nginx)
- **Medium:** Perl, Latex, WireShark, Socket Programming, Web Development(Vanilla JS, HTML, CSS)
- **Work Required:** Universal Verification Methodology(UVM1.1, 1.2), IPCamera, Cloud Platform, D3JS, PHP, Ionic(TS)
 - Python Library: pymongo, paramiko, httpserver, subprocess, netifaces, ZMQ, scikit-learn, flask (restplus)

GALLERY

[1] UVM-EthernetVIP: [git@gitlab.com:toby.liao.software/uvm-playground.git](https://gitlab.com/toby.liao.software/uvm-playground.git)

[2] Work Oder System: <https://gitlab.com/toby.liao.software/gondang>

[3] eFunLearning: <https://gitlab.com/toby.liao.software/efunlearning>

[4] Traffic loading: https://gitlab.com/toby.liao.software/ns3_allinone.git