

Alfons Hwu

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Research Interests

Deep Learning, Security, Performance, Parallel/GPU Programming. (In no particular order)

Education

National Chiao Tung University

Hsinchu, Taiwan

B.S. IN COMPUTER SCIENCE

Sep. 2015 - Jun. 2019

- Graduation Project Advisor: Kwan-Wen Chen Ph. D
- Overall GPA: 3.83/4.0, Last 60: 3.93/4.0, Major: 3.91/4.0, Rank: 28/221 (Top12.6%)

National Taiwan University

Taipei, Taiwan

M.S.-STUDENT IN COMPUTER SCIENCE AND INFORMATION ENGINEERING

Sep. 2019 - Present

- Performance, Application and Security Lab (CSIE504). [Click here for homepage.](#)
- Thesis topic: TBD. Advisor: Shih-Hao Hung Ph. D
- Current GPA: 4.22/4.30, Rank: 25/158

Experience

MediaTek

Hsinchu, Taiwan

SOFTWARE ENGINEERING INTERN

Jun. 2018 - Aug. 2018

- Multimedia algorithm development engineer internship.
- Working on porting the image processing algorithm from high-level C++ to low-level embedded C, optimizing and writing analytical reports

Cadence Design Systems

Hsinchu, Taiwan

SOFTWARE ENGINEERING INTERN

Jul. 2020 - Sep. 2020

- Develop an algorithm to optimize part of the database size.
- Up to 16% space of such part is compressed, and without any deteriorate in run-time in spite of the additional compression algorithm.
- Work with SVG-TW team to do software regression and version control together.

Awards & Honors

CURRICULAR

Gold Prize. Role as Team Leader

Taipei, Taiwan

HACKNTU 2016

Aug 21. 2016

- An eye-care sensor, which notifies user to set a period to rest, preventing myopia, along with some game-like feature to make it more interesting.
- As a team leader, my tasks are to properly distribute the work to members, convene discussions, ignite ideas, testing, and finally present a briefing.
- [Click here for the onstage presentation by me.](#)

Two-time V-AWARD

Hsinchu, Taiwan

MEDIA TEK TAIWAN

Aug. 2018

- A monthly employee performance award by the Senior Department Manager and the Director.
- The analytical report is helpful to the department, which helps boosting the industrial-grade syntax checking and code deployment.

Dean's List

Hsinchu, Taiwan

NATIONAL CHIAO TUNG UNIVERSITY

Fall. 2018

- Ranked 3/69 throughout the (sub)class, with avg. being 92.25/100

AIS3 EOF CTF Finalist

Taipei, Taiwan

INFORMATION SECURITY INCUBATION PROGRAM, MINISTRY OF EDUCATION

February. 2020

- Ranked 21/82 in the preliminary round, advanced to national final
- [Click here for homepage, Writeup](#)

EXTRACURRICULAR

Sep. 2016 **4th in 400m Freestyle**, Mayor Cup Swimming Competition, University Group
 May. 2017 **1st in 200m Freestyle Relay**, Annual Swimming Competition, National Chiao Tung University
 May. 2018 **1st in 200m Medley Relay**, Annual Swimming Competition, National Chiao Tung University
 May. 2018 **1st in 200m Freestyle Relay**, Annual Swimming Competition, National Chiao Tung University
 May. 2019 **2nd in 50m Butterfly**, Annual Swimming Competition, National Chiao Tung University

Hsinchu, Taiwan
Hsinchu, Taiwan
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Extracurricular Activities

Swimming Varsity Member

NATIONAL CHIAO TUNG UNIVERSITY

- Participated in two inter-collegiate swimming competitions.

Hsinchu, Taiwan

Sep. 2015 - Sep. 2016

Two-Time General Coordinator of Smart Transportation Hackathon

NATIONAL CHIAO TUNG UNIVERSITY

- Co-organize with my advisor, Prof. Kuan-Wen Chen aka (ITCIC 2018)
- Supervisory authorities: Dept of Information Technology, Ministry of Education, Taiwan
- Click here for homepage

Hsinchu, Taiwan

Jul. 2018 and Jan. 2019

Piano Club Member and Concert Photographer

NATIONAL CHIAO TUNG UNIVERSITY

- Click here for performance video

Hsinchu, Taiwan

Sep. 2016 - Jun. 2019

MEDShark Swimming Club Member

NATIONAL TAIWAN UNIVERSITY

- An amateur swimming club based on medical school in NTU.

Taipei, Taiwan

Sep. 2019 - Present

Selected Projects

Ping Pong Battle with FPGA

DIGITAL LAB COURSE ON SOPHOMORE YEAR

- Implement table tennis game with Verilog on XILINX FPGA, IO with PS/2 Keyboard and graphic with VGA. Featuring simple battle AI, cheat mode and smash like real tennis
- Demo video link, Source code link

Hsinchu, Taiwan

Jan. 2017

AURA RGB Light

ARM STM32 EMBEDDED LAB ON JUNIOR YEAR

- Embedded-like C, and burn into ARM STM32 board to implement a dynamic, fully-customizable RGB ambient light similar to that of gaming keyboards.
- Understanding the embedded ARM system programming, simple circuit, ADC, and PWM signal control.
- Demo video

Hsinchu, Taiwan

Dec. 2017 - Jan. 2018

Gaussian Blur Paralleled Acceleration

PARALLEL PROGRAMMING ON SENIOR YEAR

- Accelerate the Gaussian Blur with NVIDIA CUDA framework. 935 times faster on GTX1070 vs i5 7500
- GitHub repo, Report

Hsinchu, Taiwan

Dec. 2018

Multi-Player Cooperative VR Game

GRADUATION PROJECT IN NATIONAL CHIAO TUNG UNIVERSITY

- Computer vision-aided multiplayer real-time VR cooperative gaming using Kinect, Unity and VIVE.
- Best project award in Graduation Project Competition of National Chiao Tung University
- Demo video, Presentation video

Hsinchu, Taiwan

Sep. 2018 - Dec. 2018

Skills

Programming Languages

C, C++, Python, Shell Script, Makefile, MySQL, Verilog

Frameworks

Machine Learning: PyTorch, OpenCV. Parallel Computing: CUDA, OpenCL, OpenMP, gprof. Security: Pwntools

OS

Linux, macOS, Windows(including WSL)

Others

Windows Office / macOS iWork, Adobe Premiere / Photoshop, Amateur Photography, Swimming-Coach License

Natural Languages

Chinese (Native), English (TOEIC 925/990, TOEFL 102/120), Japanese (JLPT N3)