Alfons **Hwu**

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Research Interests

Deep Learning, Security, Performance, Parallel Programming, and System-Related Topics. (In no particular order)

Education

National Chiao Tung University   *Hsinchu, Taiwan*
B.S. IN COMPUTER SCIENCE   *Sep. 2015 - Jun. 2019*
- Overall GPA: 3.83/4.0, Last 60: 3.93/4.0, Major: 3.91/4.0, Rank: 28/221 (Top12.6%)
- Graduation Project Advisor: Kwan-Wen Chen

National Taiwan University   *Taipei, Taiwan*
M.S. IN COMPUTER SCIENCE AND INFORMATION ENGINEERING   *Sep. 2019 - Present*
- Performance, Application and Security Lab (CSIE504). Click here for homepage.
- Current GPA: 4.22/4.30, Rank: 25/158

Experience

MediaTek Taiwan   *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

ADLINK Taiwan   *Taipei, Taiwan*
SOFTWARE ENGINEERING INTERN   *Feb. 2020 - Jun. 2020*
- Checking the program vulnerabilities and automating it, analyzing the trade-off between performance and security.

Awards & Honors

CURRICULAR

Gold Prize. Role as Team Leader   *Taipei, Taiwan*
HACKNTU 2016   *Aug 21. 2016*
- An eye-care sensor, whcih 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 for the onstage presentation by me.

Two-time V-AWARD   *Hsinchu, Taiwan*
MEDIATEK 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 TAIWAN 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		*Hsinchu, Taiwan*
May. 2017 **1st in 200m Freestyle Relay**, Annual Swimming Competition, National Chiao Tung University		*Hsinchu, Taiwan*
May. 2017 **5th in 50m Butterfly**, Annual Swimming Competition, National Chiao Tung University		*Hsinchu, Taiwan*
May. 2018 **1st in 200m Medley Relay**, Annual Swimming Competition, National Chiao Tung University		*Hsinchu, Taiwan*
May. 2018 **1st in 200m Freestyle Relay**, Annual Swimming Competition, National Chiao Tung University		*Hsinchu, Taiwan*
May. 2019 **2nd in 50m Butterfly**, Annual Swimming Competition, National Chiao Tung University		*Hsinchu, Taiwan*

Extracurricular Activities

Swimming Varsity Member
NATIONAL CHIAO TUNG UNIVERSITY

Hsinchu, Taiwan
Sep. 2015 - Sep. 2016

- Participated in two inter-collegiate swimming competitions.

Two-Time General Coordinator of Smart Transportation Hackathon
NATIONAL CHIAO TUNG UNIVERSITY

Hsinchu, Taiwan
Jul. 2018 and Jan. 2019

- 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 1 , homepage 2

Piano Club Member and Concert Photographer
NATIONAL CHIAO TUNG UNIVERSITY

Hsinchu, Taiwan
Sep. 2016 - Jun. 2019

- 2 times onstage performance Click here for video

MEDShark Swimming Club Member
NATIONAL TAIWAN UNIVERSITY

Taipei, Taiwan
Sep. 2019 - Present

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

Selected Projects

Ping Pong Battle with FPGA
DIGITAL LAB COURSE ON SOPHOMORE YEAR

Hsinchu, Taiwan
Jan. 2017

- 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

AURA RGB Light
ARM STM32 EMBEDDED LAB ON JUNIOR YEAR

Hsinchu, Taiwan
Dec. 2017 - Jan. 2018

- 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

Gaussian Blur Paralleled Acceleration
PARALLEL PROGRAMMING ON SENIOR YEAR

Hsinchu, Taiwan
Dec. 2018

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

Multi-Player Cooperative VR Game
GRADUATION PROJECT IN NATIONAL CHIAO TUNG UNIVERSITY

Hsinchu, Taiwan
Sep. 2018 - Dec. 2018

- 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

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