

# ALFONS HWU

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## SUMMARY

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Major in CS NCTU Taiwan, Interested in AI, Machine Learning, Computer Security, Parallel Programming, and System-Related Topics.

## EDUCATION

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### **BS: National Chiao Tung University, Taiwan**

*Sep 2015 - Present*

Department of Computer Science

Overall Avg.: 88.1 / 100, Overall GPA: 3.84/4.0, Last 60: 3.94/4.0, Major: 3.93/4.0

Rank: 28/221 (Top12.6%)

Graduation Project Advisor: Kwan-Wen Chen

### **MS: National Taiwan University, Taiwan**

*Sep 2019 -*

Graduate Institute of Computer Science

## CURRICULAR EXPERIENCE AND HONORS

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### **2016 NTU Hackathon Winner**

*Aug 2016*

- Category: Smart Life, using C# for windows and Arduino for signal detection
- An eye-care sensor which notifies user to set a period for easing one's eyes along with some game-like feature to make it more interesting.
- Demo and presentation

### **2017 MakeNTU Hackathon Participant**

*Feb 2017*

- A hackathon mainly focus on integration between software and hardware

### **Scholarship Winner**

- Scored 98/100 in Data Structure, ranked 2/70 in class.
- Dean's list: Fall 2018 semester, ranked 3/69 in class.

### **Intercollegiate Programming Contest Participant**

- Participated twice in PTC, April 2017 and March 2018

### **Best Graduation Project Award**

*Fall 2018*

- Achieved first place over 28 teams in Dept. of Computer Science NCTU
- Project name: Multiplayer VR gaming assisted with Computer Vision
- Slides [here](#)

**Qualified for Exchange Student in School of Computer Science, Carnegie Mellon University**

## EXTRACURRICULAR EXPERIENCE AND HONORS

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### **MediaTek Internship, Two-Time Core Value AWARD**

*Jul 2018 - Aug 2018*

- Working on porting the Image Processing Algorithm from high-level C++ to low level embedded C, optimization and writing analytical reports

- Two-time VAWARD(Monthly employee performance award). Awarded by Senior Department Manager

## **Two-Time General Coordinator of Smart Transportation Hackathon** *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
- Hackathon webpage , webpage2

## **Swimming Varsity in National Chiao Tung University** *Sep 2015 - Sep 2016*

- Participated in two inter-collegiate swimming competitions, 4th place on 400m freestyle competition in Hsinchu Mayor Cup 2016

## **Piano Club Member in National Chiao Tung University** *Sep 2016 - Present*

- Onstage performance two times.

## **SELECTED PROJECTS**

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### **Digital Verilog Lab FPGA: Ping Pong Battle** *Nov 2016 - Jan 2017*

- Implement table tennis game with Verilog on XILINX FPGA, IO with Keyboard and VGA. Featuring simple battle AI, cheat mode and smash like real table tennis.
- Demo video

### **ARM STM32 Embedded Lab: AURA RGB Light** *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

### **Autopilot Drone** *Mar 2018 - Jun 2018*

- With OpenCV and C++ to implement the drone flying itself via ARUco marker + face recognition and lands on track.

### **Parallel Programming: Gaussian Blur Parallelization** *Dec 2018*

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

### **Graduation Project: Multi-Player Cooperative VR Game** *Sep 2018 - Dec 2018*

- Computer vision-aided multiple people real-time VR cooperative gaming using Kinect, Unity and VIVE VR
- Demo video , Presentation video

## **RELEVANT COURSES**

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### **Core Courses**

Data Structure & Algorithm  
 Computer Organization  
 Intro to Machine Learning  
 Compiler Design  
 Operating System  
 ARM STM32 Embedded Lab  
 Object-Oriented Programming

### **Other Courses**

Probabilities & Statistics  
 Signals and Systems  
 Digital Verilog Lab  
 Linear Algebra  
 Network Security  
 Parallel Programming  
 FreeBSD System Administration