# TIEH CHU

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## EDUCATION

**University of Illinois at Urbana-Champaign** Fall 2021 -
Professional Master of Computer Science
Incoming Graduate Student

**National Chiao Tung University (NCTU), Taiwan** Sept. 2016 - Jun. 2020
Bachelor of Science in Computer Science
Overall GPA: 4.07/4.3

## PUBLICATION

[1] Stefanie Tanujaya, **Tieh Chu**, Jia-Hao Liu, Wen-Hsiao Peng. "Semantic Segmentation on Compressed Video Using Block Motion Compensation and Guided Inpainting", *International Symposium of Circuits and Systems (ISCAS)*, 2020. **(Oral Presentation)**

## RESEARCH AND PROFESSIONAL EXPERIENCE

**Machine Learning Software Intern, Logitech Far East Ltd.** Mar. 2020 - Jun. 2020

- Developed, upgraded, and maintained a firmware testing automation system with python which automatically performs tests and collects all testing reports.
- Enhanced user capacity by 5-10x and decreased system setup time by optimizing system architecture.
- Expanded system capability and improved usability/user-friendliness.

**Efficient Semantic Segmentation on Compressed Video** Apr. 2019 - Feb. 2020

- Advisor: Prof. Wen-Hsiao Peng
- Developed a low-complexity segmentation propagation framework that utilizes only compressed videos.
- Outperforms the **state-of-the-art results** on the Cityscapes dataset in terms of segmentation accuracy.
- Introduced the least amount of network parameters and multiply-add operations for non-keyframe segmentation.
- Submitted as the second author in IEEE ISCAS, 2020.

## HONORS AND AWARDS

**IEEE Eta Kappa Nu Honor Society Member, Taiwan** 2019 - 2020

**1st Place, Taiwan Intelligent Transportation Creative Idea Competition (ITCIC)** 2019

- Proposed **Vehigo!**, a video and itinerary-sharing application which connects with GPS and driving recorders to enable users to share their itinerary and videos with others.

**Teacher Association Scholarship, New Taipei City Educational Association** 2018

**Outstanding Academic Achievement Award, NCTU** 2017, 2018, 2019, 2020

**Rotary Club of Yung Ho Fellowship** 2017

**Outstanding Academic Achievement Award in Digital Circuit Design, NCTU** 2017

## PROJECT EXPERIENCE

**Heart Rate Monitor** Spring 2020
*Design and Implementation of IOT Applications*

· Designed an application to monitor heart rate in real-time and show results on the dashboard.

**Contextual Attention Inpainting Network with Non-local Blocks** Spring 2018
*Deep Learning and Practice*

· Combined contextual attention module and non-local blocks to address image semantic segmentation problem.

**League of Legends – The Consistency between Emotion Management and Rank** Fall 2018
*Introduction to Machine Learning*

· Collected data and employed 4 machine learning models to explore relationships between players' emotion management and their performances in League of Legends.

**Automatic Vending Machine using STM32** Fall 2018
*Microprocessor System Lab*

· Built a simple automatic vending machine with STM32 that provides products to consumers after money was inserted into the machine.

**Online Text-to-Speech, Speech-to-Text Service** Fall 2018

· Implemented a service to accurately converts voice to text and also text into speech in different voices, tones, and speeds.

**UAV Autopilot– Face Detection and Obstacle Avoidance** Spring 2017
*Computer Vision for UAV Autopilot*

· Designed a system for drones that can utilize computer vision to perform autonomous navigation and landing from one point to another while avoiding human faces on a track.

## EXTRACURRICULAR ACTIVITIES

**UI/UX Designer and Developer, NCTU+** Sept. 2017 - Jan. 2019

· A school-wide student organization aiming to maintain and improve the university online system.
· Developed, maintained, and improved the university online system used by students in NCTU.
· Designed a grade point average calculator prototype and conducted user research.

**Microsoft DigiGirlz Workshop** Dec. 2018

## SELECTED COURSEWORKS

Data Structures and Object-oriented Programming, Algorithms, Operating Systems, Introduction to Database Systems, Javascript Web Programming, Computer System Administration, Design and implementation of IOT Applications, Linear Algebra, Discrete Math, Probability, Statistics, Introduction to Machine Learning, Deep Learning and Practice, Computer Vision for UAV Autopilot

## TECHNICAL STRENGTHS

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|---|---|
| **Tools/Libraries** | PyTorch, Linux, Git |
| **Programming Languages** | C/C++, Python, JavaScript, HTML, CSS, Verilog, Shell Script |
| **Test Scores** | GRE: 325, TOEFL: 103, TOEIC: 945 |