


# Hsu-Ting Kuo

✉ b08508028@ntu.edu.tw  Hsu-Ting Kuo

## EDUCATION

### National Taiwan University (NTU)

Sep. 2020 – Present

B.S. in Biomedical Engineering (BME)

- Selected courses: Basic Anatomy (A+), Organic Chemistry (A-), Biomedical Engineering Lab(A+), Bioinformatics (A+), Biotransport: Principles and Applications (A), Fundamentals of Biomedical Image Processing (A+), Machine Learning (A+)

### National Taiwan University (NTU)

Feb. 2020 – Jun. 2020

Visiting student, The Special Visiting Student Program for Hong Kong Students


### The Chinese University of Hong Kong (CUHK)

Sep. 2018 – Jan. 2020

BEng. in Biomedical Engineering (BME)

- Selected courses: Human Anatomy and Physiology I (A-), Human Anatomy and Physiology II (A-)

## POSTERS

- Hsu-Ting Kuo**, Yi-Ju Lee, Chan-Min Hsu, Ching-Hsiang Chu, An-Chi Wei. "Confocal-based Platform for Screening Mitochondrial Morphological and Functional Changes in the AC16 Cardiac Cell Line". Accepted to the 14th Meeting of the Asia Pacific Federation of Pharmacologists(APFP 2021) 

## RESEARCH EXPERIENCE

### The Biomedical System Engineering Lab, NTU, Advisor: Prof. An-Chi Wei

Dec. 2019 – Present

Undergraduate Researcher

Taipei, Taiwan

- Project titled "**Confocal-based toxicity screening platform to quantify dose-response changes in mitochondrial morphology and functions**"
- Established a pipeline which covers cell culture, sample preparation, confocal microscopy imaging, image processing and data analysis for the platform
- Established a pipeline to analyze mitochondrial membrane potential using ImageJ
- Established a pipeline for automated mitochondrial segmentation using U-Net, a convolutional neural network (CNN)
- Performed cell culture of Human Cardiomyocyte Cell Line (AC16), prepared sample for fluorescence microscopy, and collected multi-channel confocal images of AC16 cells

### The Physical Cell Biology Lab, Institute of Physics, Academia Sinica, Advisor: Dr. Keng-Hui Lin

Dec. 2019 – Present

Undergraduate Research Assistant

Taipei, Taiwan

- Collected confocal image data of MDCK cells and calculated the cell volume using LimeSeg on ImageJ
- Optimized the protocol of making 3D microwell through looking for the suitable chemicals to passivate the surface of cell culture platform
- Performed cell culture of Madin-Darby Canine Kidney (MDCK) Cells

### The Neuroscience Summer Internship Program, Academia Sinica, Advisor: Dr. Keng-Hui Lin

Jul. 2019 – Aug. 2019

Summer Intern

Taipei, Taiwan

- Project titled "**Spherical Microwell Arrays for Mesenchymal Stem Cell Cultures**"
- Simplified the protocol of making 3D cell culture platform
- Observed the change in self-renewal ability of mesenchymal stem cells under 3D confinement
- Performed cell culture of Human mesenchymal stem cells (hMSCs) and REF52 cells

### The Biophotonics Laboratory, CUHK, Advisor: Prof. HO, Ho Pui Aaron

Nov. 2018 – Dec. 2019

Undergraduate Research Intern

Hong Kong

- Summarized research papers to identify unique advantages of centrifugal microfluidics
- Reviewed past competition contents and analyzed the strength of winning teams
- Collaborated with graduate students in the project team to participate in competitions

## TECHNICAL SKILLS

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- **Microscopy:** Fluorescent/laser confocal microscopy (Zeiss LSM800, ZEN Blue)
- **Image Processing:** ImageJ Macro, OpenCV, Scikit-image
- **Programming Language:** Python, C/C++, MATLAB
- **3D CAD Modeling:** SolidWorks
- **Wet Lab:** Cell and tissue culture, Mammalian cell culture, Media preparation, Fluorescent staining techniques
- **Language:** English (TOEFL iBT: 105/120), Chinese (Native), French (Beginner)

## HONORS & AWARDS

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**Professor Charles K. Kao Student Creativity Awards 2019, CUHK** **May. 2019**

- Championship
- Special Awards in Mathematics and Physics/ Mechanics and Control Systems

**The 5th Hong Kong University Student Innovation and Entrepreneurship Competition, Hong Kong** **May. 2019**

- Merit prize of Mathematics and Physics/ Mechanics and Control Systems

**Dean List's Award 2018-2019** **Sep. 2018 – Jun. 2019**

## EXTRACELLULAR ACTIVITIES

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**Art and Design Manager, NTU, The Society of Hong Kong Studies** **Aug. 2020 – Jan. 2021**

**Information Officer, CUHK, Taiwanese Student Association** **Mar. 2019 – Jun. 2020**

**Student Ambassador, CUHK, Department of Biomedical Engineering** **Nov. 2019 – Dec. 2019**

**International Student Ambassador, CUHK** **Sep. 2018 – Jun. 2019**