Curriculum Vitae of Po-Sheng Cheng

for Design Science M.S., University of Michigan. (U-M ID: 91239502)

Bechalor of Science in **Bio-Mechatronics Engineering** and Bechalor of Arts in **Economics**, National Taiwan University (NTU).

Publication

TeleSHift: Telexisting TUI for Physical Collaboration & Interaction

(forthcoming) Andrew Chen, Tzu-Ling Yang, Shu-Yan Cheng, **Po-Sheng Cheng**, Tzu-Han Lin, and Kaiyuan Lin. 2022. In Proceedings of the 2022 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp/ISWC '22 Adjunct), https://doi.org/10.48550/arXiv.2209.08362

- Apr. - Sep. 2022
- This work recieved the **Best Demo at Ubicomp/ISWC 2022**.
- In this work, a 3D tangible user interface (TUI) with telexisting communication framework for group-based collaboration is presented.
- I laid out the system architecture of the presented prototype in this work with ESP32 microcontroller, potentiometers, DC motors, etc. I also implemented the mechanical design and power supply circuit of the prototype.
- Additionally, my design for manufacturing improvements helped reducing assembling time of the prototype to only 1/5.

Experiences

Electromechanical Engineering Intern, Logitech

UX survey, mechanics design

- Feb. - Jun. 2022
- I proposed a innovative keyboard switch, then conducted a UX survey with 50 interviewees to understand its target audience and lastly designed three working prototype to demonstrate the technology.
- Besides statistics with R for the UX survey, my engineering capabilities including modeling with Creo, SLA/3DP prototyping, electromagnet and microcontroller circuits design and stepper motor control were involved.

College Student Researcher, NTU

Software development, system integration

- Jul. 2021 - Feb. 2022

- I developed a novel spectral mapping system named HSI that integrates several electrical/optical components with LabVIEW software development environment.
- By researching the readout sequence of the EMCCD and optimizing the algorithm, I reduced the scanning time by 26%.
- Also involved Flutter UI/UX, C++, hyperspectral image processing, Electron Multiplying CCD and stepper motor control.
- I won the following awards with this project:
  - **2021 Technology Innovation Award** by CCMS, NTU (USD$660)
  - **College Student Research Creativity Award** by National Science and Technology Council of Taiwan (USD$660)

Self-directed project, Bio-Electromagnetics Laboratory, NTU

Electrical system integration, mechanics design

- May. 2020 - Jul. 2022
- I designed a IoT machine to monitor the amount of bugs in farm fields with inhouse-designed controller board and mechanics.
- Technical aspect involved mechatronics, IoT with Arduino (XBee), PCB design (Altium), Python, SolidWorks, Raspberry Pi, MySQL.

Competitions

Championship, 2021 National Thesis Competition for College Students

Covid-19's Impact on Online Video Streaming Platform from The Perspective of Consumer Preference. **Po-Sheng Cheng**, Ming-Chieh Chang, Hsuan-Yu Chou and others.

- Feb. - Apr. 2021
- Awarded USD$1000.
- I used my econometrics skills(Chi-square test for independence, Logistic regression) to understand the relationship between customer's context and preferences.

Golden Medalist, 19th Mobileheroes Award

UI evaluation

- Sep. - Dec. 2020
- Category of 5G innovative application, awarded USD$10000 by Industrial Development Bureau of Taiwan.
- Our team ARGO has developed a AR platform that utilizes advanced image-based spatial recognition algorithm which enables real-time AR interactions on personal mobile devices. My main contribution was UI evaluation and design of the AR world for demo.