# WEICHING CHEN

(857) 800-3793 ⋄ wc683@cornell.edu ⋄ LinkedIn

## SUMMARY

Cornell University M.S. Design Technology @ Cornell AAP Department.
My research focuses on integrating design thinking and creative concepts with technology to develop innovative products, including web design, AIoT, and robotics. I am committed to advancing new technologies that address real-world challenges effectively.

## EDUCATION

**Cornell University**                                                    Sep 2024 - Present
M.S., Design Technology - *Advisor: Daniel Leithinger*

**National Taiwan University**                                          Sep 2019 - Jun 2024
B.S. in Electrical Engineering

## HONORS AND AWARDS

- Line Fresh Global Hackathon 2nd Place, 2020
- MakeNTU Best Application Category 2nd Place, 2020
- Google Science Fair Global 20 Finalists, 2018-2019
- Guest Speaker at Microsoft "WINHEC WOMEN IN TECH" Event, 2018
- Invited to the President's Office for Science Competition Excellence, 2018
- Guest Speaker at Taipei Municipal Dunhua Junior High School (2018)
- Canada Worldwide Science Fair Gold Medal, 2018
- Taiwan International Science Fair 2nd Place, 2018

## EXPERIENCE

**Department of Design Technology, Cornell University**                          Ithaca, NY
*Research Assistant*                                                     *Sep 2024 - Present*

- Smart Interactive Lever Coffee Machine: Developed a lever coffee machine equipped with smart feedback capabilities to guide users in operating the machine correctly. Additionally, the machine collects user data to analyze habits and preferences, offering personalized recipes for users to explore and enjoy.

  Project involved: Embedded System Programming (ESP32), Wi-Fi Connectivity (MQTT), Product Design, and Cloud Services (AWS IoT Core)

**Nexuni Co. Ltd.**                                                               Taiwan
*Co-founder / Board Member / Software Lead*                             *June 2019 - Aug 2024*

Co-founded a company and led a team of 21 people to develop automation solutions in food, parking lot, and semiconductor industries. Below are some of our featured projects:

- Automation Parking Lot Project: Developed automated parking lot management system with robust License Plate Recognition (LPR) engine that achieves 99.5% accuracy. The system is a turnkey solution including backend server and a web app that integrates all season parking registration, parking fee payment, and special discount.
- Automation Dessert Store Project : Develop automation technologies to aid daily operation of dessert stores, including ordering/payment, kitchen, and store management automation.

**Harvard Graduate School of Design**                                        Cambridge, MA
*Urban Planning Discovery Program*                                     *July 2023 - Aug 2023*

- Housing Expansion Plan for East Boston Piers: Focused on planning and renovating the East Boston Piers site to accommodate 1,000 additional households. Proposed a space-time design concept that optimizes facility space proportions based on residents' daily activity patterns.

  Project involved: Urban Planning, Housing Design, Community Development, and Sustainable Infrastructure Design

## PROJECTS

### Resilient Tensegrity Robot: Inspired by Spider Webs and Melons           Sep 2024 - Present

- Designed and developed a tensegrity robot inspired by spider webs and the Voronoi patterns found on melons. The robot is highly adaptable, capable of transforming into various shapes to suit different environments. Its resilient structure ensures stability under diverse forces or when parts are damaged. The next phase involves conceptualizing a design for a resilient tensegrity structure suitable for deployment on Mars, addressing challenges such as extreme environmental conditions and structural durability.

  Project involved: Rhino, Grasshopper, Python, MATLAB, Blender

### Timber Tensegrity Chair                                                    Sep 2024 - Dec 2024

- Designed a custom tensegrity chair, focusing on timber joinery and accommodating the constraints of robotic wood cutting. Utilized an ABB IRB-6700 6-axis robotic arm for precise timber cutting and chair construction.

  Project involved: Rhino, Grasshopper, Python, G-Code, ABB RobotStudio

### PCube                                                                      March 2021 - March 2022

- Developed a contactless ordering system utilizing advanced sensors, transforming traditional paper menus into digital, touch-free interfaces. This design allows businesses with limited technical expertise to easily update their menus, enhancing accessibility and convenience. The touchless functionality is particularly valuable in mitigating health risks during COVID-19, promoting a safer dining experience.

  Project involved: Python, PyQt5, SolidWorks, NVIDIA Jetson Nan

## LEADERSHIP

- NTUEE Performance Leader (2019 - 2024)
- Taiwan International Science Fair Assistant Judge (2019)
- National Taiwan Science Educational Center – Thailand STEM Explorer Program Teaching Assistant (2019)
- Student Ambassador at High School of Normal University (2016 - 2018)
- Student Councilor at High School of Normal University (2016 - 2017)

## SKILLS

**Programming:** Python, Flask, PyQt5, ROS2, VPython, C++, Javascript, ReactJS, React Native, P5.js, THREE.js, HTML, CSS, C#, MATLAB, Java
**Software:** Adobe Illustrator, Adobe Photoshop, Adobe After Effects, Adobe Premiere Pro, Adobe XD, Rhino, Grasshopper, SolidWorks, Docker, PostgreSQL, Unity, Blender, PrusaSlicer, ABB RobotStudio, LabVIEW, Android Studio
**Language:** Native – Mandarin and Taiwanese, Fluent – English