

Yen-Chun Huang

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EDUCATION

National Yang Ming Chiao Tung University (NYCU)

Hsinchu, Taiwan

B.S. in Electrical and Computer Engineering; **GPA: 4.03/4.30**

Sep 2019 – Sep 2023

Innovative Technology and Art Program; **GPA: 3.98/4.30**

Sep 2020 – Jan 2023

Relevant coursework: Intro to Algorithms, Data Structure, OOP, Intro to Artificial Intelligence, Interaction Design and VR, Embedded System Lab, Calculus I-II, Differential Equations, Probability, Linear Algebra, Complex Analysis, Design, Intro to Visual Art, Intro to Technology and Art

University of Illinois Urbana-Champaign

Champaign, IL, USA

Exchange Student in Electrical and Computer Engineering; **GPA: 3.30/4.00**

Jan 2023 – May 2023

Relevant coursework: Algorithm, Game Development, Basics of Game Design

PROJECTS

Game Jams

Jul 2023 – Aug 2023

- Reefenge - Developed for GMTK 2023's jam "roles-reverse", is an arena shooter game with a twist where players control enemies against a formidable protagonist. Collaborated on a distinctive pixel art style and introduced diverse enemy archetypes to offer varied strategic approaches.
- No Sight, All Might - Submitted to 1-bit jam "light & dark", is a strategic game using only two colors. Players use light to observe, but combat is limited to darkness, promoting anticipation of enemy movements. Integrated engaging boss battles with mechanics deeply rooted in the light-dark theme. Successful hits in the dark provide momentary light, enhancing strategy and offering player rewards, including combo-driven perks. Delivered a thematic and gratifying player experience.

3D Virtual Gallery

Oct 2022 – Jan 2023

- Designed and developed an immersive 3D virtual gallery using JavaScript Three.js library, tailored to showcase the creative works of past students of a collaborating professor.
- Constructed an interactive web-based environment accessible via browsers, offering guests a navigable virtual space controlled by mouse and keyboard inputs. Constructed an interactive web-based environment accessible via browsers, offering guests a navigable virtual space controlled by mouse and keyboard inputs.

VR game Meat Ball Rider

Nov 2022 – Jan 2023

- Developed a VR endless-runner game inspired by a local internet meme. Integrated physical interactions for players to control the in-game character using a fitness ball. Bouncing and leaning motions translate directly to in-game movement, allowing players to dodge obstacles.
- Incorporated innovative haptic feedback with fans for wind effects and vibrators for terrain sensations, enhancing player immersion.

Board Game Designs

Mar 2023 – May 2023

- Duel Zone - Conceived and designed a two player board game, drawing inspiration from acclaimed board games like Concordia, 7 Wonders Duel, and the cinematic universe of Mad Max: Fury Road. Engages players in strategic card and resource management, and offers versatile win conditions: overpower the opponent, dominate the most territories, or advance civilization, ensuring varied gameplay and replayability.
- Custom Game Boards for 7 Wonders: Taiwan Edition - Reimagined the classic board game "7 Wonders" by integrating iconic Taiwanese landmarks. Crafted new game mechanics in sync with each Taiwanese location, play-tested against original boards for balanced gameplay, and delved into thematic nuances such as competing for finished stages for Taipei 101.

Hand Motion Recognition

Dec 2021 - Jan 2022

- Developed an gesture recognition tool to facilitate interaction with computer interfaces using hand movements. Leveraged Google's MediaPipe solution with enhancements to detect not only static hand gestures but also continuous motions, allowing intuitive actions like scrolling web pages with wave gestures.
- Integrated the technology into a gaming environment where users can employ various hand shapes and motions to represent in-game actions, such as emulating a handgun to shoot.

ACADEMIC EXPERIENCE

Transdisciplinary Design Innovation Shop, NYCU

Hsinchu, Taiwan

Team TDIS

May 2022 – Jun 2022

- Spearheaded the team in a prestigious international architectural competition, focusing on the implementation of smart home systems, including IoT sensors, lighting, and HVAC automation. Designed and deployed a user-centric interface using the open-source Home Assistant platform.
- Triumphed over numerous teams, securing 1st place in Architecture and 3rd place in Innovation. Engaged in in-depth discussions and clarifications with the juries, articulating our design choices and strategies. Superior rankings in energy performance and house functionality.
- Championed team spirit and diplomacy: delivered the opening address, coordinated with international team members for effective collaboration, and hosted a dinner in our self-built house for three global competitor teams.

Mobile Intelligent Network Technology Lab, NYCU

Hsinchu, Taiwan

Undergraduate Research Assistant

Jun 2021 – Jan 2022

- Investigated the enhancement of federated learning efficiency through terahertz beam forming, emphasizing the optimization of beam forming antenna arrays for optimal wireless communication.
- Utilized KKT conditions and numerical computations to establish a correlation between training efficiency and the number of beams, accounting for trade-offs between gain and time delay within the system's physical constraints.

WORK EXPERIENCE

Wistron NeWeb Corporation

Hsinchu, Taiwan

Advanced Technology Development Intern

Aug 2022 – Nov 2022

- Conducted comprehensive research on protocol types and packet characteristics for web gaming, aiming to boost the performance of the company's router.
- Enhanced packet inspection feature to account for transmission delay and elapsed time. Modified the router's web user interface by prioritizing and sorting data, resulting in a more intuitive and user-centric experience.

Tutor in Various Subjects

Math, Physics, English, Piano

Sep 2020 – Aug 2023

- Offered lessons in English for international students to comprehend Taiwan's math curriculum, facilitating their academic integration and success in a different educational system.
- Successfully guided English-learning students to pass the GEPT Elementary English test, demonstrating effective teaching strategies and targeted preparation.

AWARDS & ACHIEVEMENTS

Solar Decathlon Europe 2021/22: 1st place in Architecture, 3rd place in Innovation among 18 international teams.

NYCU ECE Project Poster Award: Awarded to undergraduate students presenting research posters in the electrical and computer engineering field, achieved by only 7 out of over 200 participants.

NYCU GCSP Report 1st Place: Awarded to top honors as a freshman for presenting an innovative engineering solution addressing one of the Sustainable Development Goals.

SKILLS

Programming: C, C++, C#, Python, Git, JavaScript, Html, Css

Softwares: Unity, Unreal, Photoshop

Languages: Mandarin Chinese (Native), English (Fluent)

TOEFL: 111/120 (R: 30, L: 30, S: 25, W: 26)