

# Wei-En, Tsai

[GitHub](https://github.com/wayne-tsai) [Website](https://wayne-tsai.idlab.tw) [LinkedIn](https://www.linkedin.com/in/wei-en-tsai) [Email](mailto:schwarz.tsai@gmail.com)

## EDUCATION

<b>National Tsing Hua University</b> <i>M.S. in Information Security. GPA:4.2/4.3</i>	Sept. 2021 - Present
<b>National Tsing Hua University</b> <i>B.B.A. in double specializations in Computer Science and Quantitative Finance. Last 60 Credits GPA:3.86/4.3</i>	Sept. 2017 - Jun. 2021

## ENTREPRENEURSHIP & INDUSTRY EXPERIENCE

<b>De.Vote Inc.</b> <i>Founder, CEO, and Backend Engineer (5-person company)</i>	Aug. 2022 - Present
<ul style="list-style-type: none"><li>Secured over 16,000 USD in government funding / 6,700 USD through crowdfunding campaign.</li><li>Served the top 5 construction companies in Taiwan and the Chinese Taipei Olympic Committee.</li><li>Achieved national top 20 startup ranking in Taiwan's 2022 FITI (From IP to IPO) program.</li></ul>	
<b>Aisen Technology Co., Ltd.</b> <i>Founder, CEO and Full Stack Engineer (2-person company)</i>	Jul. 2019 - Present
<ul style="list-style-type: none"><li>Secured a 14,000 USD grant from the Ministry of Digital Affairs's 2023 "Public Welfare Innovation Case 100".</li><li>Champion of the 2021 National Tsing Hua University Startup Garage Team.</li><li>Runner-up in the 2019 Shanghai Jiao Tong University Entrepreneurship Invitational.</li></ul>	

## RESEARCH EXPERIENCE

<b>Department of Quantitative Finance, National Tsing Hua University</b> <i>Part-time Research Assistant / Supervisor: Prof. Wan-Chien Chiu</i> <i>Research Focus: Finance x Text Mining.</i>	Jul. 2019 - Present
<ul style="list-style-type: none"><li>Implemented parallel programming techniques in web scraping and text processing applications to efficiently handle large volumes of data.</li><li>Developed a large-scale web scraping program with an automatic proxy switching feature for enhanced data collection efficiency.</li><li>Developed a Telegram bot for real-time monitoring and progress notifications of large-scale application executions.</li></ul>	
<b>Service Science Institute, National Tsing Hua University</b> <i>Part-time Research Assistant / Supervisor: Prof. Patricia Pei-Yi Kuo</i> <i>Research Focus: HCI, Data Visualization.</i>	Apr. 2023 - Aug. 2023
<ul style="list-style-type: none"><li>Developed a health bracelet dashboard for study participants, complete with a feedback interface.</li><li>Developed an easily-maintained backend management system for researchers with non-programming backgrounds.</li></ul>	
<b>Department of Finance, National Taiwan University</b> <i>Part-time Research Assistant / Supervisor: Prof. Kevin Tseng</i> <i>Research Focus: Finance x Text Mining.</i>	Jul. 2022 - Aug. 2022
<ul style="list-style-type: none"><li>Identified specific data patterns within over 10TB of data (details confidential under NDA).</li></ul>	
<b>Office of Interdisciplinary Research, National Tsing Hua University</b> <i>Full-time Research Assistant / Supervisor: Prof. Po-Hsuan Hsu</i> <i>Research Focus: Finance x Text Mining.</i>	Jul. 2021 - Aug. 2021
<ul style="list-style-type: none"><li>Implemented advanced entity recognition measures for efficient trademark retrieval from product names.</li></ul>	
<b>Information Security Incubation Program Ministry of Education</b> <i>Advanced Cybersecurity Mentorship Program Participant</i>	Oct. 2017 - Sep. 2021
<ul style="list-style-type: none"><li>Conducted research on router vulnerability exploitation under the guidance of serial entrepreneur Jeremy Chiu.</li><li>Excelled in advanced CTF and industrial cybersecurity training.</li></ul>	

## ACADEMIC PUBLICATION

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<b>The ACM Symposium on User Interface Software and Technology (UIST)</b>	Oct. 2023
<i>Aisen - Web-Based Gaze-Tracking Assistive Communication Interface with Word Cards Generated by LLMs</i>	
<b>Role:</b> First Author; <b>Category:</b> Student Innovation Contest	
<b>DOI:</b> <a href="https://dl.acm.org/doi/10.1145/3586182.3625116">https://dl.acm.org/doi/10.1145/3586182.3625116</a>	
<b>The 33rd VLSI Design / CAD Symposium</b>	Aug. 2022
<i>iWalkSafe - Wearable Navigation Assistance for the Visually Impaired Based on Miniaturized Edge AI</i>	
<b>Role:</b> First Author; <b>Category:</b> Poster Presentation	
<b>College Student Research Scholarship Ministry of Science and Technology</b>	Jul. 2020 - Feb. 2021
<i>How does innovation matter? A firm-level analysis using textual-information in patent documents</i>	
<b>Role:</b> Sole Author; <b>Category:</b> Individual Research	

## PATENTS

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<b>Method and System for Proxy Voting</b>	<i>Taiwan Intellectual Property Office</i>	Sept. 2023
<i>Primary Inventor of an efficient, user-centric and privacy-enhanced proxy voting method</i>		
<i>Patent ID: 112210061 (Granted)</i>		

## PROJECTS

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### **De.Vote: Decentralized Voting System with Patented Blockchain and Trust-Computing Technology**

- Total Award Grant: US\$16,000, Team Size: 5, Duration: 16-Month, Role: Leader, Backend Developer
- Orchestrated the development of a robust, scalable system infrastructure, enhancing voting integrity and user trust.
- Achieved a patented system design.

### **Aisen: Web-Based Gaze-Tracking Assistive Communication Aid**

- Total Award Grant: US\$20,000, Team Size: 2, Duration: 4-Year, Role: Leader, Lead Developer
- Innovated in assistive technology by developing a purely web-based gaze-tracking system, significantly improving communication accessibility for patients with communication disorders.

### **idLab eID: Practical eID Solution for Schools and Enterprises**

- Total Award Grant: US\$4760, Team Size: 1, Duration: 12-Month, Role: Solo Developer
- Engineered a versatile eID system from ground up, tailored to streamline identity management processes in educational and corporate environments.

### **iWalkSafe: Wearable Navigation Assistance Based on Miniaturized Edge AI**

- Total Award Grant: US\$1,575, Team Size: 3, Duration: 6-Month, Role: Lead Developer
- Pioneered a cutting-edge wearable navigation solution using Edge AI, enhancing pedestrian safety through real-time environmental awareness and guidance.

(for project details and awards, please visit [wayne-tsai.idlab.tw](http://wayne-tsai.idlab.tw))

## SELECTED AWARDS

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<b>Hsing Chien Award</b>	<i>National Tsing Hua University</i>	May 2023
<i>Awarded highest honor for exceptional achievements and contributions to the university community.</i>		
<b>Jesus Friend Scholarship</b>	<i>Taiwan Image Tek Corp.</i>	Dec. 2022
<i>Awarded for exceptional academic performance, showcasing dedication and innovation in scholarly pursuits.</i>		
<b>Outstanding Student Scholarship</b>	<i>LCY Education Foundation</i>	Nov. 2022
<i>Granted to students who have shown exemplary academic performance and leadership skills.</i>		
<b>Silver Award, 3MT Academic Presentation Competition</b>	<i>National Tsing Hua University</i>	Jun. 2022
<i>Secured second place, presenting research in 3 minutes to a non-specialist audience, among 50+ participants.</i>		

## OTHER SKILLS

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**Teaching Assistant:** Data Structures, Intro to High-Tech Entrepreneurship, Capstone Project in CS

**Programming Languages:** Python, Ruby, C/C++, JavaScript, Shell Script, Perl

**TOEFL:** 103/120

**GRE:** 319/340

**Related Courses:**

Software Studio (A+), The Attack and Defense of Computers (A+), Linux Operating System Kernel (A+), Network Security (A+), Service-Oriented Architecture (A+), Intro to Embedded System (A-), Intro to IoT (A-)