

# CHIH-CHIEH (MORRIS) FAN

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## SUMMARY

Passionate about Integrated Circuits (IC) design. Experienced in Analog Integrated Circuit and ASIC design with a focus on low-power, high-performance SOC Physical Design and Verification. And I enjoy exploring new tech and learning new things.

- **ASIC Design Tools** Cadence, Hspice, Laker/Custom Compiler, Composer/Virtuoso, Innovus, Vivado
- **Languages/Frameworks** C/C++, Python, Verilog, Vim Editor, MATLAB, HTML
- **TCAD Tools** Silvaco, Athena, Atlas, Tonyplots, Altium Designer

## EDUCATION

### University of California, Berkeley

Berkeley, CA

Exchange in Electrical Engineering and Computer Sciences

Aug. 2023 - May. 2024

- **Coursework:** Digital IC Design, ASIC Lab, Linear IC Design, Computer Architecture.
- **Research Project:** "Dual Port SRAM22 PCB Layout Design" and "BAG3++ Generator Design".

### National Tsing Hua University (NTHU) (GPA 3.96/4.30, 3.81/4.00)

Hsinchu, Taiwan

B.S. in Electrical Engineering

Sep. 2021 - Jun. 2023

- **Coursework:** Analog IC Design, VLSI, Microelectronics, Signals and Systems, Solid-State Electronic Device, Semiconductor Fabrication (Lithography), Control System, Discrete Math, Probability, Linear Algebra, PDE, ODE.
- **Capstone Project:** ADC design for "IOT Sensor Interface Circuit Chip".

### National Taiwan University of Science and Technology (NTUST) (GPA 4.20/4.30, 3.99/4.00, 1%)

Taipei, Taiwan

B.S. in Electronic and Computer Engineering

Sep. 2020 - Jun. 2021

- **Coursework:** Digital Logic Design, FPGA, Computer Programming, Calculus I/II, Physics I/II, Physics Lab. I/II.

## PROJECT/RESEARCH EXPERIENCE

### BAG3++ Generator for Analog Design Assistance [\[code\]](#)

Berkeley, CA

Undergraduate Research with Prof. [Borivoje Nikolic](#), [SLICE Lab](#), EECS, UC Berkeley

Oct. 2023 - Present

- Developed expertise in BAG flow using Python and designed a generator for layout design and **circuit optimization**.
- Designing the layout and schematic generators, simulations, and design scripts using Python and C++.

### Dual Port SRAM22 PCB Layout Design [\[code\]](#)

Berkeley, CA

Undergraduate Research with Prof. [Borivoje Nikolic](#), [BWRC Lab](#), EECS, UC Berkeley

Sep. 2023 - Present

- Designed PCB Layout for PhD student Rahul's SRAM22 chip for measurements and verifications **within two weeks**.
- Constructed Layout using Altium Designer, gaining PCB taped-out experience, utilizing PartSync and Bom Builder.

### IoT Sensor Interface Circuit Chip Design [\[poster\]](#)[\[paper\]](#)[\[slides\]](#)

Hsinchu, Taiwan

Capstone project led by Prof. [Kea-Tiong \(Samuel\) Tang](#), EE, NTHU

Feb. 2023 - Dec. 2023

- Developed expertise in designing a **low-noise, high-bandwidth** ADC Circuit for E-nose, reducing power costs by **10%**.
- As a **team leader**, I cultivated excellent communication skills and leadership while collaborating with my team.
- **Taped-out** (2 teams per semester) with 180nm fabrication at [TSRI](#), gained hands-on experience in the full IC design routine.

### 128\*16 bits ROM Memory Macro Design [\[paper\]](#)

Hsinchu, Taiwan

VLSI course taught by Prof. [Meng-Fan \(Marvin\) Chang](#), EE, NTHU

Sep. 2022 - Jan. 2023

- Designed a NOR-based ROM memory array with a 0.18 $\mu$ m CMOS process.
- Achieved a read time of under 5 nanoseconds, which is **10% lower** than the SPEC.
- Ranked **1<sup>st</sup>** out of 50 groups in the performance competition of the final project for smallest layout area consumption.

### LDO Noise Filter Design [\[slides\]](#)

Hsinchu, Taiwan

AIC course taught by Prof. [Kea-Tiong \(Samuel\) Tang](#), EE, NTHU

Sep. 2022 - Jan. 2023

- Designed a reference voltage using a bandgap reference circuit and a low dropout regulator (LDO) to filter out input noise.
- Ranked **9<sup>th</sup>** out of 124 students in the performance competition of the individual project.

## WORK EXPERIENCE

### English Teaching Assistant

Taipei, Taiwan

National Taiwan University of Science and Technology, Language Center

Dec. 2020 - Aug. 2021

- Designed courses and provided individual office hours for over 20 students per semester.
- Gained experience in teaching methodologies and effective communication with students.

## Co-Founder and Vice President

Taipei, Taiwan

National Taiwan University of Science and Technology ECE Student Association

Oct. 2020 - Jun. 2021

- Demonstrated my leadership skills, revitalizing the ECE Student Association within a year to become an active part of the department. Holding sports events for more than 300 participants.

## Residential Assistant [\[badge\]](#)

Taipei, Taiwan

National Taiwan University of Science and Technology, Student Assistance Division

Dec. 2020 - Jun. 2021

- Appointed as the residential assistant (RA) of the international student dormitory based on my English proficiency.
- Being the first Taiwanese in charge of the international dormitory for students from 25 countries.

## Interpreter [\[link\]](#)

Taipei, Taiwan

UK Education Information Center UAEAS

Mar. 2021

- Introduced the program of College of Contra Costa (CCC) and Diablo Valley College (DVC) to students in Taiwan who seek USA education.

## AWARDS

NTHU Pilot Program Scholarship (Living costs at Berkeley)

Sep. 2023

UCLA Overseas Exchange Scholarship (Full Sponsored) [\[link\]](#) (Sponsored by NTHUEE)

Mar. 2022

2021 Code for Gender Hackathon Finalist, Rank 8th/50 (Issued by Womany X Google)

Aug. 2021

NTUST ECE Assistant Professor Xu Meng Chao Memorial Scholarship (Top 1% of ECE Dept.)

May. 2021

Dean List [\[link\]](#) (Ranked 2<sup>nd</sup> out of 124 students at NTUST ECE, GPA 4.21/4.30, Top 1%)

Jan. 2021

First Place in Taiwan College Student Start-Up Competition [\[link\]](#) (out of 30 teams from Taiwan)

Oct. 2020

## LICENSES (Issued by Workforce Development Agency, Ministry of Labor, Taiwan)

Level B Technician for Digital Electronics [\[credentials\]](#)

Mar. 2020

Level C Technician for Industrial Electronics [\[credentials\]](#)

Aug. 2019

Level C Technician for Computer Hardware Fabrication [\[credentials\]](#)

Aug. 2018

## VOLUNTEER

### Data Center Volunteer [\[link\]](#)[\[badge\]](#)

Santa Clara, CA

Taiwan Tech Summit

Aug. 2023 - Sep. 2023

- Provided instant technical assistance at the information center, collaborated with the Taiwan Data Science Association (TWDS) community. Expanding my net working with employees in the industry.

### Leadership and Presentation Skills Instructor [\[certificate\]](#)

Hsinchu, Taiwan

Dale Carnegie Training Taiwan

May. 2020 - Sep. 2020

- Designed and led activities that inspired individuals to develop student's leadership and cooperation skills.
- Teaching effective techniques for creating attractive presentations, including the use of body language.

### English Tutor and Instructor Volunteer [\[certificate\]](#)

Hsinchu, Taiwan

United Microelectronics Corporation (UMC) Charity

July. 2020 - Aug. 2020

- Assisted elementary school students with their homework and gave them advice.
- Reducing the inequality in education and supporting minorities.

### Local Volunteer [\[certificate\]](#)

Hsinchu, Taiwan

AIESEC Taiwan (NCTU)

Jun. 2019 - Sep. 2019

- Collaborated with college students from other countries, we designed engaging English lessons that catered to the learning needs and interests of elementary school students.

### SCOUT [\[link\]](#)

Hsinchu, Taiwan

Boy Scouts of America (BSA)

Sep. 2013 - Present

- Organizing events and activities for both the elderly and children in my community. Shaping my perspective of giving back to the community and fostering a commitment to lifelong service.