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 (Senior)   *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 (Sophomore & Junior)   *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 (Freshman)   *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.

Low-Power, High-Slew OP Amplifier Design for LCD Display [Report]   Berkeley, CA

Linear IC Design course taught by Prof. Rikky Muller, EECS, Berkeley   *Nov. 2023 - Dec. 2023*

- Designed a two-stage (telescopic cascode & Class AB Amplifier) with low power and low settling error.
- Achieved a 600uW of power consumption and 0.17us settling time, 50% better than the SPECs.

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 0.18μm CMOS process.
- Achieved a read time of under 5 nanoseconds, which is **10% lower** than the SPEC.
- Ranked 1st 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 9th out of 124 students in the performance competition of the individual project.

WORK EXPERIENCE

English Teaching Assistant
National Taiwan University of Science and Technology, Language Center

Taipei, Taiwan
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
National Taiwan University of Science and Technology ECE Student Association

Taipei, Taiwan
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]
National Taiwan University of Science and Technology, Student Assistance Division

Taipei, Taiwan
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]
UK Education Information Center UKEAS

Taipei, Taiwan
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 Gender Hackathon Finalist, Rank 8th/50 [slides][link] (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 2nd 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 [certificate][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]
Taiwan Tech Summit

Santa Clara, CA
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]
Dale Carnegie Training Taiwan

Hsinchu, 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][link]
United Microelectronics Corporation (UMC) Charity

Hsinchu, Taiwan
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]
AIESEC Taiwan (NCTU)

Hsinchu, Taiwan
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]
Boy Scouts of America (BSA)

Hsinchu, Taiwan
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.