

Chia-Yang Tsai

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RESEARCH INTERESTS

- **Chip Security:** Pre-Silicon Chip Security Analysis, Hardware Trojan
- **IC Design Flow:** Digital System Design, Testing, Physical Design

EDUCATION

- **National Taiwan University (NTU)** *Taipei, Taiwan*
M.S. in Electrical Engineering *Sep. 2022 - Jun. 2024*
- **National Central University (NCU)** *Taoyuan, Taiwan*
B.S. in Electrical Engineering *Sep. 2017 - Jun. 2021*

WORK EXPERIENCE

- **TSMC:** DTP / Test Chip Physical Design Department *Jul.2023 - Aug. 2023*
 - Developed an algorithm for automated blockage patch generation in chip floorplan.
 - Solved chip placement bottlenecks with customization for different tech nodes.
 - Achieving 3rd Place in the R&D-DTP Group's Final Competition
- **Academia Sinica:** Institute of Information Science *Jul.2022 - Aug. 2022*
 - Researched DL algorithms & enhanced the recommendation system for E.SUN Financial Holding Co., Ltd.

PROJECT EXPERIENCE

- **[CVSD Final Project] 5G MIMO Demodulation , host by MediaTek**
QR Decomposition for 4-layer QPSK is implemented from RTL coding algorithm design. Synthesis, APR (gds.), using TSMC .13um processing technology. *Fall 2023*
- **A 1.8GHz ~ 3.0GHz Wide Range Phase Locked Loop with 6-phase Output**
Designed and optimized a high-frequency PLL for sync and broad divisor range, simulated using HSpice. *Spring 2020*
- **Digital System Design and Implementation**
Implement a Bomberman game, including RTL design and synthesis, on an FPGA. *Spring 2019*

COURSES

- **ICS Related:** Computer-Aided VLSI System Design, DSP in VLSI Design, Computer Organization
- **EDA Related:** Data Structure, VLSI Testing, Digital System Design & Implementation
- **Other:** Fault Tolerant Computing, Machine Learning, Data Science.

SKILLS

- **Programming Languages:** C/C++, Verilog, Python.
- **Tools:** Innvous, PrimeTime, Design Compiler, Spyglass, TetraMax, Verdi, nWave, Tcl
- **Certificate:** *MediaTek* Digital IC Design Program, *TSMC* Advanced Circuit Design Curriculum

EXTRA-CURRICULAR ACTIVITIES

- **NCU Yunlin-Chiayi Area Alumni Association, Activities Officer** *Jul. 2018 - Jun. 2019*
- **Exchange Student, Peking University** *Jul. 2018 - Aug. 2018*
- **TSMC Udreamer Plan, Team Leader** *Fall 2017*