Yun-Yao (Eric) Tien

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EDUCATION

National Taiwan University Taipei, Taiwan
Master of Science in Electronics Engineering Sep. 2022 – Present
- Specialization: Electronic Design Automation

Bachelor of Science in Electrical Engineering (GPA: 3.83/4.3) Sep. 2018 – June 2022
- Selected: Computer Architecture, Digital Signal Processing, Physical Design, Deep Learning for Computer Vision

WORK EXPERIENCE

Software Engineer Part-time | *CosmicQuant, Crypto Start-up* June 2023 – Dec. 2023
- Developed a high-frequency crypto trading system deployed on AWS, with 10x asset increase within 3 months.
- Engineered a profit analytics system, integrating data collection in InfluxDB and visualization via Grafana.

Teaching Assistant | *Switching Circuit and Logic Design* Sep. 2023 – Dec. 2023

Validation Engineer Intern | *Intel Corp. Data Center and AI Group* Aug. 2021 – July 2022
- Validated and debugged High-Speed IO devices at a system level, focusing on Compute Express Link (CXL).
- Automated the debug flow by analyzing the logged registers and generating root cause diagnosis.
- Built a full-stack system to organize and visualize test results, improved 80% in management efficiency.

Teaching Assistant | *Machine Learning* Mar. 2021 – June 2021

RESEARCH EXPERIENCE

Distributed Timing Analysis | *Electronic Design Automation Lab* Feb. 2023 – Present
- Proposed a multi-level scheduling algorithm to optimize makespan, accelerating timing analysis for VLSI circuits by avg 29.9%, and enhancing scalability to millions of gates and 128 machines.
- Secured an oral presentation slot at *VLSI Design/CAD Symposium 2023* in Taiwan.

Conversational AI Research | *Speech Processing and Machine Learning Lab* Aug. 2020 – Dec. 2021
- Built an open-domain chatbot using GPT2, reinforcement learning (PPO2), and a self-designed persona selector to enhance the engagement of the interlocutor.

SELECTED PROJECTS

Bikesla: Smart Cycling | *Embedded System* Sep. 2021 – Dec. 2021
- Developed an IoT application for bike finding, speeding detection, and anti-theft functions, utilizing a low-power MCU (STM32L4 Discover Kit), Bluetooth, and a custom iOS app developed in Swift.

Pipelined RISC-V CPU | *Digital System Design* Apr. 2021 – June 2021
- Implemented and optimized a 5-stage pipelined RISC-V CPU using Verilog, with the extension of branch predictor (90% accuracy), L2 cache, and 16-bit compressed instruction extension. ($Freq: 380MHz, area: 312026\mu m^2$)

Sambo Terminator: Neuro Traffic Aid | *Biomedical Engineering* Mar. 2021 – June 2021
- Engineered a predictive system with 82% accuracy for identifying turning intentions using EEG signals and a custom CNN model (Pytorch), aiming to enhance traffic safety.

HONOR & SKILLS

Vice Captain: Varsity Badminton Team of National Taiwan University
Awards: 2nd out of 100+ teams in National Shopee Coding Contest 2020
Programming Language: C++, Python, Verilog