KAI-CHUN (KEVIN) CHANG

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OBJECTIVE

As an undergraduate researcher in cyber-physical systems (CPS) and electronic design automation (EDA), I am applying for a Ph.D. program in EECS/ECE for Fall 2023.

EDUCATION

National Taiwan University (NTU) *Sept. 2018 – Present*
B.S. in Electrical Engineering (EE) *Taipei, Taiwan*

- **GPA**: overall: 4.25/4.30, last-60-credits: 4.29/4.30, major: 4.24/4.30, ranking: 8/249 (3%)
- **Selected courses (all with an A+ grade)**: Algorithms (ranked No. 1 in the class), Introduction to Intelligent Vehicles (ranked No. 1 in the class), Data Structure, Introduction to EDA, Data Structure and Programming, Physical Design for Nanometer ICs, Logic Synthesis and Verification, Computer-Aided VLSI System Design

PUBLICATIONS

[1] **Kevin Kai-Chun Chang**, Chun-Yao Chiang, Pei-Yu Lee, and Iris Hui-Ru Jiang, "Timing Macro Modeling with Graph Neural Networks", in *Proceedings of 59th Design Automation Conference (DAC)*, San Francisco, CA, USA, July 2022 (*to appear*)

HONORS AND AWARDS

Dean's List Award – *for top 5% students* (5 times) – EE Dept. at NTU *Fall 2018 – Fall 2021*
Research Grant for University Students – Ministry of Science and Technology (Taiwan) *July 2021 – Feb. 2022*
3rd Place in Bachelor's Thesis Award – EE Dept. at NTU *July 2021*
Irving T. Ho Memorial Scholarship – College of EECS at NTU *Fall 2021*
Bachelor Scholarship – Taiwan Semiconductor Manufacturing Co., Ltd. *Spring 2021*

RESEARCH AND PROFESSIONAL EXPERIENCE

IRIS Lab (Prof. Iris Hui-Ru Jiang) *July 2020 – Present*
Undergraduate Researcher *Taipei, Taiwan*

- Achieve 10% macro model size improvement in comparison with the state-of-the-art work while preserving extremely high timing accuracy on the timing macro modeling problem.
- Propose a graph-neural-network-based generic framework that is available on various advanced node timing analysis and multi-corner multi-mode (MCMM) models.

Laboratory of Prof. Chung-Wei Lin *Jan. 2022 – Present*
Undergraduate Researcher *Taipei, Taiwan*

- In collaboration with Prof. Qi Zhu from Northwestern University and Prof. Chao Huang from Liverpool University.
- Analyze the safety of unprotected left-turn of connected and autonomous vehicles theoretically and empirically.
- Propose a neural-network-based framework considering various physical scenarios of vehicles, which avoids inter-vehicle collisions and enhances efficiency at the same time.

IEEE TCAD, ASP-DAC, and ISPD *Summer 2021*
Paper Reviewer

WORK EXPERIENCE

Synopsys, Inc. *July 2021 – Aug. 2021*
Technical-Engineering Intern in Digital Design Group *Taipei, Taiwan*

- Provided a thorough analysis on 3D IC routing strategies to effectively guide the development of related tools.

EE Dept. at NTU *Feb. 2021 – June 2021*
Teaching Assistant *Taipei, Taiwan*

- **Algorithms** (EE4033): Lectured 4 recitation classes, graded 6 assignments, and received several positive comments from students on the semester course feedback survey.
- **Computer Architecture** (EE4039): Designed a lab demonstrating memory hierarchy and gave an in-depth lecture about advanced dynamic random-access memory (DRAM) technologies.

TECHNICAL SKILLS

Programming: C/C++(STL), Python, Tcl/Tk, Verilog, Go

Developer Tools: Git, Docker, LaTex

LEADERSHIP

MakeNTU *Oct. 2020 – May 2021*
General Coordinator *Taipei, Taiwan*

- Led 100+ staffs and managed over 1 million NTD budget to hold MakeNTU, one of the largest Makeathon contests in Taiwan.
- Designed multiple plans to meet sponsors' requirements, remain within budget, and even adapt to COVID-19 precaution policies.