TAO ZHANG

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EDUCATION

Rutgers University Sep. 2024 – present
Ph.D in in Computer Science

The Hong Kong University of Science and Technology Sep. 2022 – Apr. 2024
M.Phil. in in Electronic and Computer Engineering

Sun Yat-sen University Sep. 2018 – Jun. 2022
B.Eng. in Electronic Information Science and Technology

PUBLICATIONS

[C2] APPLE: An Explainer of ML Predictions on Circuit Layout at the Circuit-Element Level 2024
Tao Zhang, *Haoyu Yang, Kang Liu, Zhiyao Xie* ASP-DAC

[C1] Security and Reliability Challenges in Machine Learning for EDA: Latest Advances 2023
Zhiyao Xie, ***Tao Zhang****, Yifeng Peng* ISQED

RESEARCH EXPERIENCES

M.Phil. Student supervised by Prof. Zhiyao Xie Sep.2022-Apr. 2024
The Hong Kong University of Science and Technology Hong Kong, China

Explainable ML Solutions in Circuit Design Flow

- Propose a new technique to explain each ML prediction at the resolution level of circuit elements. This is the first research effort to explain ML predictions on circuit layouts. It provides a significantly more reasonable, useful, and efficient explanation for prediction.
- A first-authored papersubmitted to IEEE/ACM Asia and South Pacific Design Automation Conference (***ASP-DAC***) 2024. It is the top conference in electronic design automation.

Security and Reliability Challenges in ML for EDA

- Study and summarize the latest literature about the security and reliability challenges in ML for EDA. Work with Prof. Xie to write an updated survey paper on this topic.
- A second-authored (first-student-author) invited paper accepted by the International Symposium on Quality Electronic Design (***ISQED***) 2023.

Research Assistant advised by Prof. Liang Wang Oct.2020-Jun.2022
Sun Yat-sen University Shenzhen, China

Safety inspection and recognition based on YOLO v5 at construction site

- Design Algorithms to address issues regarding instant recognition of safety helmets.
- A paper as the primary author was submitted.

Summer Intern advised by Prof. Linqi Song July. 2021 – Oct.2021
City University of Hong Kong Shenzhen, China

Internet of Vehicles

- Design the vehicle path planning algorithms for real scenarios.
- Build and test the collaborative perception model used for lane prediction.
- Design the dynamic correlation mechanism between vehicles and roadside units in time-varying wireless networks with channel state.

Teaching Experience

Introduction to Computer Organization and Design — Spring 2023
The Hong Kong university of Science and Technology — TA of ELEC2350

Talks & Presentations

APPLE: An Explainer of ML Predictions on Circuit Layout at the Circuit-Element Level — Spring 2024
ASP-DAC'2024 (Seoul, South Korea)

Selected Honors and Awards

Dean's Fellowship — 2024
Rutgers University

Full Postgraduate Scholarship — 2022, 2023
The Hong Kong University of Science and Technology

Student Award for Research and Innovation — 2021
Sun Yat-sen University

Excellent Student Cadre — 2020
Sun Yat-sen University