

# Kai-Jie Lin

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## Education

### National Yang Ming Chiao Tung University

Hsinchu, Taiwan

Senior year of B.S. in Computer Science

Sep. 2021 - Now

- Overall GPA: 3.83/4.0
- Relevant Courses: Algorithm, Graph Theory, Operating System, System Administration, Machine Learning, Deep Learning

### University of Illinois Urbana-Champaign

Illinois, USA

Exchange student in Computer Science

Aug. 2024 - Dec. 2024

- Relevant Courses: System Programming, Statistical Reinforcement Learning, Applied Parallel Programming

## Experience

### NVIDIA - NYCU Advanced Research Project

Hsinchu

Research Assistant

Jul. 2023 - Sep. 2023

- Research Topic: Reinforcement Learning for Bayesian Optimization
- Helping design the algorithm and implement the experiments. We demonstrate that our work constantly achieves better performance than previous works.

## Publications

### BOFormer: A Generalized Deep Q-Learning Framework for Multi-Objective Bayesian Optimization

ICML AutoRL Workshop, 2024

(Spotlight)

Yu-Heng Hung\*, Kai-Jie Lin\*, Chien-Yi Wang, Ping-Chun Hsieh (\* denotes equal contribution)

- Multi-Objective Bayesian optimization (MOBO) offers an efficient pipeline for optimizing black-box functions.
- Presenting a generalized deep Q-learning framework and propose *BOFormer*, which substantiates this framework for MOBO via sequence modeling.

## Projects

### GPU Convolution Kernel Optimizations

Illinois, USA

Applied Parallel Programming Course Project, [\[Link\]](#)

Sep. 2024

- Optimizing the convolution kernel on GPU using CUDA and utilizing optimizations such as Tensor Cores, tiling, and kernel fusion.

### UIUC Course Explorer Filesystem

Illinois, USA

System Programming Honor Project (Embedded System), [\[Link\]](#)

Sep. 2024

- Building a virtual filesystem on Raspberry Pi 5 through Filesystem in Userspace allowing for browsing of UIUC course information.

### Multi-Objective Denoising Diffusion Policy Optimization

Hsinchu, Taiwan

Deep Learning Course Project, [\[Link\]](#)

Jun. 2024

- Fine-tuning diffusion models with multi-objective reinforcement learning from human feedback.

### Cellphone Rating System

Hsinchu, Taiwan

Database Course Project, [\[Link\]](#)

Dec. 2022

- Using Django to build a website that allows users to rate cellphones and provide recommendations.

### Multispeaker Transcription

Hsinchu, Taiwan

Meichu Hackathon Android Accessibility project, [\[Link\]](#)

Oct. 2023

- Deploy large language models Android app that identify the user who is speaking. Transcript the audio and display in the app.

## Honors & Awards

Nov. 2022 **Bronze Medal**, 2022 ICPC Asia Taoyuan Regional Programming Contest

Taoyuan, Taiwan

Oct. 2022 **Bronze Medal**, 2023 ICPC Asia Taoyuan Regional Programming Contest

Taoyuan, Taiwan

Oct. 2023 **Bronze Medal**, 2023 Meichu Hackathon Google Group - Android Accessibility

Hsinchu, Taiwan

## Skills

**Programming** C/C++, Python, Kotlin, Java, CUDA

**Machine Learning** Scikit-learn, Pytorch, Botorch, Large Language Models, Diffusion Models, RLHF

**Website/Mobile** Django, Android Studio, SQL, AWS, HTML, CSS, JavaScript