Chia-Hsiang (Aaron) Kao

ck696@cornell.edu | Google Scholar | Website

Education

Cornell University, *Ithaca, NY, USA* *2023 - Present*
- Ph.D. Student in Computer Science
- Advisor: Professor Bharath Hariharan and Kavita Bala

National Yang-Ming Chiao-Tung University, *Taipei, Taiwan* *2015 - 2022*
- Doctor of Medicine
- Advisor: Professor Wei-Chen Chiu and Doctor Pin-Yu Chen

Research Interest

Current Research

- *Scientific Reasoning, Plan Generation* Multi-modal LLM Agent for Earth Science
  - Developing a self-verifiable LLM for remote sensing question-answering with instruction tuning and consistency preference optimization. Advisor: Professor Bharath Hariharan and Professor Kavita Bala

- *Video Generation* Video rerendering from any angle and any trajectory
  - Developing diffusion-based video generation with arbitrary customized perspectives via static scene and dynamic object reconstruction. Professor Wei-Chiu Ma

Previous Research

- Learning Algorithms: meta-learning[2] and non-backpropagation learning[6]

- Sequence Modeling: DNA[3,4] and satellite video[5]

- AI Applications: biology[3,4], medical imaging[1], and remote sensing[5]

Publications

[6] Counter-Current Learning: A Biologically Plausible Dual Network Approach for Deep Learning.
Chia-Hsiang Kao, Bharath Hariharan
In NeurIPS 2024

[5] AllClear: A Comprehensive Dataset and Benchmark for Cloud Removal in Satellite Imagery
Chia-Hsiang Kao*, Hangyu Zhou*, Cheng Perng Phoo, Utkarsh Mall, Bharath Hariharan, Kavita Bala
In NeurIPS Datasets and Benchmarks Track 2024

[4] Caduceus: Bi-Directional Equivariant Long-Range DNA Sequence Modeling
Yair Schiff, Chia-Hsiang Kao, Aaron Gokalsan, Tri Dao, Albert Gu, Volodymyr Kuleshov
In ICML 2024

[3] Advancing DNA Language Models: The Genomics Long-Range Benchmark
Chia-Hsiang Kao*, Evan Trop*, McKinley Polen*, Yair Schiff*, Bernardo P. de Almeida, Aaron Gokaslan, Thomas Pierrot, Volodymyr Kuleshov
In AAAI (workshop) 2023

[2] MAML Is a Noisy Contrastive Learner in the Classification
Chia-Hsiang Kao, Wei-Chen Chiu, Pin-Yu Chen
In ICLR 2022

[1] Demystifying T1-MRI to FDG18-PET Image Translation via Representational Similarity
Chia-Hsiang Kao, Yong-Sheng Chen, Li-Fen Chen, Wei-Chen Chiu
In MICCAI 2021

Honors & Awards

- Student Travel Award, MICCAI 2021 *2021*
- Undergraduate Research Fellowship, National Science and Technology Council, Taiwan *2018, 2020*
- Summer Research Fellowship, National Health Research Institutes *2018*

Services

Conference Reviewer: NeurIPS'21, AutoML'22, NeurIPS'24, ICLR'25, AAAI'25, AISTAT'25
Journal Reviewer: CVIU (2022), Comput. Electr. Eng. (2024), IEEE TETCI (2024)