

Chia-Hsiang (Aaron) Kao

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Research

• Ongoing Projects

- Building LLM systems for multi-modal (i.e., language, vision, code), self-reflective question-answering
- Finetuning LLMs to reason with mass spectrometry for de novo peptide sequencing

• Research Interests

- Reasoning with long context, multi-modality, and unstructured data
- Deep learning algorithm design^[2,6]
- Applications in remote sensing^[5] and bio-medicine (DNA^[3,4], proteomics, medical imaging^[1])

Education

Cornell University, Ithaca, NY, USA

2023 - Present

- Ph.D. Student in Computer Science
- Advisor: Prof. Bharath Hariharan and Prof. Kavita Bala

National Yang-Ming University, Taipei, Taiwan

2015 - 2022

- Doctor of Medicine
- Advisor: Prof. Wei-Chen Chiu and Dr. Pin-Yu Chen

Selected 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 Gokalsan, Thomas Pierrot, Volodymyr Kuleshov.
In AAAI (workshop) 2023.
- [2] MAML Is a Noisy Contrastive Learner in 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

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

Services

Conference Reviewer: NeurIPS'21 workshop, AutoML'22, NeurIPS'24

Journal Reviewer: CVIU (2022), Comput. Electr. Eng. (2024)