

Ching Lam CHOI

Researcher-in-training: robust scaling in AI

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EDUCATION

Ph.D. in Computer Science [Massachusetts Institute of Technology](#)

📅 2024 – 2028 (expected) 📍 Cambridge, USA

- Supervisors: Phillip Isola, Antonio Torralba & Stefanie Jegelka.
- Incoming EECS Ph.D. student at MIT CSAIL, working on robust scaling.

B.Eng. in Computer Science (AIST) [Chinese University of Hong Kong](#)

📅 2020 – 2024 (expected) 📍 Hong Kong

- Mentors: Hongsheng Li & Anthony Man-Cho So.
- Major GPA: 3.676 / 4.000 (First Honours: expected).

RESEARCH

📄 Publications

- R. Liu, Y. Ge, C. L. Choi, *et al.*, “Divco: Diverse conditional image synthesis via contrastive generative adversarial network,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021, pp. 16 377–16 386.

📖 Pre-Prints

- C. L. Choi and A. Duplessis, “Pfade: Path feature attributions via debiased explanations,” *In submission*, 2023.
- C. L. Choi and F. Farnia, “On the generalization of gradient-based neural network interpretations,” *In submission*, 2023.
- C. L. Choi and F. Farnia, “Universal adversarial directions,” *arXiv preprint arXiv:2210.15997*, 2022.
- Y. Ge, X. Zhang, C. L. Choi, *et al.*, “Self-distillation with batch knowledge ensembling improves imagenet classification,” *arXiv preprint arXiv:2104.13298*, 2021.

EXPERIENCE

Research Intern [Pioneer Centre for Artificial Intelligence](#)

📅 Feb – Jun 2024 📍 Copenhagen, Denmark

- Collaborator: Serge Belongie.
- Fair, robust, multi-calibrated knowledge distillation through granularity.

Research Intern [Mila–Québec Artificial Intelligence Institute](#)

📅 May – Aug 2023 📍 Montréal, Canada

- Collaborators: Yann Dauphin & Aaron Courville.
- Quantization aware initialization for robust, quantizable models.

Research Intern [Max Planck Institute for Intelligent Systems](#)

📅 Jan – Apr 2023; Sep '23 – Jan '24 📍 Tübingen, Germany

- Collaborators: Wieland Brendel & Yash Sharma.
- Sparse adversarial attacks/training for preserving clean accuracy, reducing the generalization error and improving computational efficiency.

Research Intern (remote) [Stanford AI Lab](#)

📅 Jan – Jun 2022 📍 Stanford University, USA

- Collaborator: Jiajun Wu.

INTERESTS

Towards robust scaling with better 1. data, 2. models and 3. post-hoc guarantees.

1. Data Bottleneck: Scarcity of real image-text data for sustainably scaling models without model collapse → enter synthetic data.

2. Complex Models: Current scaling-law notions of model complexity lack robustness/fairness → enter compression, distillation and symbolic-logic architecture design.

3. Post-Hoc Guarantees: To build inherently interpretable, multi-calibrated, fair, private models → realise aligned and benign AI.

Stephen Fry: “We are not nouns, we are verbs. I am not a thing [but] a person who does things.”

Other academic interests: 1980s British sketch comedies, Shakespearean studies, German.

INITIATIVES

- Co-organised the **New in ML** workshop at NeurIPS '23, with talks and panels on AI ethics, academic writing, career planning in industry/academia.
- Co-organised the **CoSubmitting Summer** workshop at ICLR '22: funded & mentored 55 research projects from underprivileged minorities.
- Co-organised the **Undergraduates in Computer Vision Social** at ICCV '21; shared insights on breaking into research in academia / industry.
- Reviewer: CVPR '23, ICCV '23, NeurIPS '23, ICLR '24, CVPR '24, ICML '24, ECCV '24.

REFEREES

Prof. Hongsheng Li

@ Associate Professor, EE, CUHK

✉ hsli@ee.cuhk.edu.hk

Dr. Wieland Brendel

@ ELLIS Group Leader, Max Planck (MPI-IS)

✉ wieland.brendel@tuebingen.mpg.de

Prof. Aaron Courville

@ Professor & CIFAR CAI Chair, MILA

✉ courvila@iro.umontreal.ca

SELECT AWARDS

- Google Code-In 2019: Runner-Up (Julia)

- Scene understanding via image intrinsics & Neural Radiance Fields (NeRFs).

Research Intern

[NVIDIA AI Tech Center](#)

📅 Sep 2020 – Oct 2021

📍 NVIDIA, HK

- Worked with **Ming-Yu Liu**, **Arun Mallya**, **Ting-Chun Wang** on improving Face Vid2Vid for audio-driven video synthesis.
- Worked with **Charles Cheung**, **Simon See** on explainable GANs.

Research Student

[Multimedia Laboratory \(MMLab\)](#)

📅 Aug 2019 – Aug 2022

📍 CUHK, HK

- Mentored by **Hongsheng Li**; worked on self-supervised Learning, Generative models, fine-grained video understanding.

Research Assistant

[Theoretical Machine Learning Lab](#)

📅 Jan 2022 – Present

📍 CUHK, HK

- Collaborating with **Farzan Farnia**; researching adversarial training and robustness; understanding generalisation; MixUp.

- **Sensetime** 2nd International Artificial Intelligence Fair: 1st Prize
- **iCan** / 5th International Invention Innovation Competition in Canada: Best 10 Women Inventors + Special Award + Gold Medal
- **Hong Kong Jockey Club** Scholarships 2021/22
- **HKSAR** Talent Development Scholarship 2022/23
- **HKEX** Foundation Scholarship for Biotechnology and Innovation 2019/2020
- **HSBC** Greater Bay Area (Hong Kong) Scholarship 2020/2021
- **CUHK** Outstanding Students Award '22, '21
- **Morningside CUHK** Master's List '23, '22, '21
- **Engineering CUHK** Dean's List '23, '21

SKILLS

English

Cantonese

Mandarin

AI

Computer Vision

Machine Learning

Python

PyTorch

Julia