Daniel Shiu-hong KAO

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EDUCATION

- **The Hong Kong University of Science and Technology** — Hong Kong S.A.R., China
  MPhil in Computer Science and Engineering — Sep 2023 - Aug 2025
  *GPA: **3.86/4.30**; Supervisor: Professor Chi-Keung Tang (Email: cktang@cs.ust.hk)*
  Research focus: deep learning, computer vision

- **The Hong Kong University of Science and Technology** — Hong Kong S.A.R., China
  Bsc in Data Science and Technology / Bsc in Computer Science — Sep 2019 - Jul 2023
  *GPA: **3.76/4.30**, Major GPA: **3.92/4.30**, WES iGPA: **3.83/4.00***; First Class Honors

- **Northwestern University** — Illinois, USA
  Exchange Student in McCormick School of Engineering — Mar 2022 - Jun 2022
  *GPA: **4.00/4.00***; High Honors

AWARDS

- **Stars of Tomorrow Award of Excellence** — Jan 2025
  Microsoft Research Asia
  Selected award for interns with outstanding effort and performance at Microsoft Research Asia.

- **Postgraduate Studentship** — Academic Year 2023-24
  The Hong Kong University of Science and Technology
  Research grant for HKUST Research Postgraduate (RPg) students.

- **First Class Honors** — Jul 2023
  The Hong Kong University of Science and Technology
  Undergraduate academic award

- **Chern Class Scholarship** — Academic Year 2020-21
  The Hong Kong University of Science and Technology
  Scholarship for students with excellent performance in mathematics.

- **University Scholarship for Continuing Undergraduate Students** — Academic Year 2021-22, 2022-23
  The Hong Kong University of Science and Technology
  Academic scholarship for the students at HKUST whose CGA is in the top 10th percentile of all continuing undergraduate students.

- **Silver Medal, Shing-Tung Yau's Mathematics Award** — Jul 2018
  National Taiwan University
  National science fair for mathematical research.

- **Dean's List** — 2019-2023
  The Hong Kong University of Science and Technology
  High GPA at HKUST. Fall 2019, Fall 2020, Spring 2021, Fall 2022, Spring 2023 (5 out of 7 semesters)

- **Dean's List (High Honors)** — Spring 2022
  Northwestern University
  Academic award for a full GPA at NU.

PUBLICATIONS

- **ThinkVideo: High-Quality Reasoning Video Segmentation with Chain of Thoughts**
  Shiu-hong Kao, Yu-Wing Tai, Chi-Keung Tang
  Arxiv preprint: arXiv:2505.18561. Project page: https://danielshkao.github.io/thinkvideo.html.

- **Think Before You Segment: High-Quality Reasoning Segmentation with GPT Chain of Thoughts**
  Shiu-hong Kao, Yu-Wing Tai, Chi-Keung Tang
  Arxiv preprint: arXiv:2503.07503. Project page: https://danielshkao.github.io/thinkfirst.html.

- **StreamGS: Online Generalizable Gaussian Splatting Reconstruction for Unposed Image Streams**
  Yang LI, Jinglu Wang, Lei Chu, Xiao Li, **Shiu-hong Kao**, Ying-Cong Chen, Yan Lu
  International Conference on Computer Vision 2025 (ICCV 2025). *Work done during internship at MSRA.*

- **UVRM: A Scalable 3D Reconstruction Model from Unposed Videos**
  Shiu-hong Kao, Xiao Li, Jinglu Wang, Yang Li, Chi-Keung Tang, Yu-Wing Tai, Yan Lu
  Arxiv preprint: arXiv:2501.09347. *Work done during internship at MSRA.*

- **Deceptive-NeRF/3DGS: Diffusion-Generated Pseudo-Observations for High-Quality Sparse-View Reconstruction**
  Xinhang Liu, Jiaben Chen, **Shiu-hong Kao**, Yu-Wing Tai, Chi-Keung Tang
  The European Conference on Computer Vision 2024 (ECCV 2024).

- **InceptionHuman: Controllable Prompt-to-NeRF for Photorealistic 3D Human Generation**
  Shiu-hong Kao, Xinhang Liu, Chi-Keung Tang, Yu-Wing Tai
  Arxiv preprint arXiv:2311.16499.

- **Run, Don't Walk: Chasing Higher FLOPS for Faster Neural Networks**
  Jierun Chen, **Shiu-hong Kao**, Hao He, Weipeng Zhuo, Song Wen, Chul-Ho Lee, S.-H. Gary Chan
  The IEEE/CVF Conference on Computer Vision and Pattern Recognition 2023 (CVPR 2023).

- **StableKD: Breaking Inter-block Optimization Entanglement for Stable Knowledge Distillation**
  Shiu-hong Kao*, Jierun Chen*, Gary S.H. Chan
  Arxiv preprint arXiv:2312.13223. *Equal contribution.

- **Integer Partition: Further Discussion of the Number of the Integer-side Triangles**
  Shiu-hong Kao, Pohsing Chou, Gerard Jennhwa Chang
  Silver medal, Shing-Tung Yau's Mathematics Award by National Taiwan University.

ACADEMIC SERVICES

- **Reviewer:**: ICLR 2025
- **Sub-reviewer:**: BMVC 2023, ICLR 2024, CVPR 2024
- **Teaching assistant**: Deep Learning in Computer Vision, Computer Graphics, Computer Organization

RESEARCH PROJECTS

- **AlignKD: A Low-cost Technique for Convolutional Shortcut Removal**   Sep 2022 - Dec 2022
  Course project for Deep Learning for Computer Vision
  Deep Learning, Convolutional Neural Networks

- **Dynamic Neural Network Comparison: Efficiency and Performance**   Sep 2021 - Jan 2022
  Undergraduate Research Opportunities Program (UROP), HKUST
  Deep Learning, Computer Vision, Dynamic Neural Network

- **Press Release Classification on Mobile Application**   Feb 2021 - Jun 2021
  Undergraduate Research Opportunities Program (UROP), HKUST
  Android Development, Machine Learning, Natural Language Processing

Industrial Research Experience

- **Microsoft Research Lab, Asia** — Jun 2024 - Now
  Research Intern, Media Computing Group
  Research and publish paper in conferences with focus on 3D computer vision.

- **Hong Kong Applied Science and Technology Research Institute** — Jun 2021 - Aug 2021
  Summer Intern, Multimedia Systems And Analytics
  Design and develop algorithms to solve problems; research the latest technologies; tasks including image processing, OCR, deep learning, etc.

Invited Talks

- **NCKU 2023 AIoT Training Camp with Special Topic on Autonomous Vehicles** — Jul 2023
  National Cheng Kung University
  Invited talks about autonomous vehicles and self-driving technologies.

- **Divide and Distill: Achieving Higher Accuracy, Speed and Data-Efficiency** — May 2023
  for Knowledge Distillation
  The Hong Kong University of Science and Technology
  Presentation for the undergraduate thesis "Divide and Distill (DnD)".

Leadership

- **Head Student Ambassador** — Academic Year 2022-23
  The Hong Kong University of Science and Technology
  Assisting with university's undergraduate recruitment, including experience sharing, presentations, and other recruiting events.

- **Peer Mentor** — Academic Year 2021-22
  School of Science, The Hong Kong University of Science and Technology
  Mentoring, providing necessary helps, holding orientation events for freshmen in the university.

- **Sub-committee, Mainland Students and Scholars Society, UG Section** — Academic Year 2019-20
  The Hong Kong University of Science and Technology

- **Student Ambassador** — 2019-2023
  The Hong Kong University of Science and Technology

- **Taiwanese Student Association** — 2019-2023
  The Hong Kong University of Science and Technology

- **Taiwanese American Student Association** — Spring 2022
  Northwestern University

Others

- **Skills**: Artificial Intelligence, deep learning, computer vision, statistical inference, big data systems, edge computing
- **Languages**: Mandarin (native), English (professional), Hokkien (native), Cantonese (medium)
- **Hobbies**: Guitar, singing, cooking, traveling, bartending, snooker, sports