

Teaching Statement
Chi Keung Tang

HKUST courses taught: computer vision (UG and PG), vision and graphics (PG), computer graphics (UG), deep learning for computer vision (UG and PG), understanding large language models (PG), competitive programming (UG; for ACM ICPC programming team), object-oriented programming and data structures (UG), computer organization (UG), C++ programming (UG).

No Pain, No Gain. I may not be one of those award-winning faculty in HKUST receiving highest teaching evaluations (well, mine are still very good), because I work hard to make sure my students work hard to receive a robust and high-quality education, in order to prepare them for future career challenges, academic or industry. Thus, in contrast to a number of HKUST instructors trapped in their own self-reinforcement prophecy believing our students are not as good and thus cutting necessary syllabus and to maintain good teaching evaluations, starting from spring 2002, I introduced computer projects on par with top US graphics schools in COMP341/4411 (*Computer Graphics*), had students produce 3000+ lines of C++ codes since 2004 in COMP152H/2012H (*Object-Oriented programming and Data Structures*) with a real-time stock exchange system as programming assignment #1, introduced *Competitive Programming* in 2006 helping our students to enter ACM ICPC world finals, and voted against eliminating *Theory of Computation, Principles of Programming Languages* from the CS core requirements despite the motions were carried by majority. Seeing the revolutionary trend brought by deep learning, in 2017, I was the first in HKUST to introduce and teach deep learning in undergrad courses, notably *Deep Learning for Computer Vision*, now becoming one of the most important elective courses in CSE Dept. Again, in 2022, I was the first in HKUST to introduce and teach *Understanding Large Language Models*. Among multiple times I received a round of applause in the last day of class, the most impressive time was after my explanation: “Look at the hard work you are doing. Students must be higher than their teachers in the long term. Otherwise, according to Darwin’s Theory of Evolution, the human race would have already come into extinction, you and I would not be sitting in this classroom.”

Excellence in UG education and scholarship. HKUST was established as a research-intensive university. Teaching and research should be aligned to better benefit our students, especially those who are gifted. When my CSE colleagues wondered many recent CSE PhD applicants have first-authored CVPR/ECCV/ICCV papers during undergrad years, I was ready to tell them that back in 2012 I started publishing CVPR/ICCV papers with undergrad students. Many recent final year projects (FYP) or undergrad research opportunities (UROP) have produced CVPR/ICCV/ECCV submissions which helped my students to get admitted by top schools worldwide. The following lists the grad schools my undergrad students pursued or are pursuing their MS or PhD degrees, alongside with the top papers published with me during their HKUST years. Unlike other undergrads coauthors, my undergrad CVPR/ICCV/ECCV coauthors got their papers accepted without any PhD student involvement: they drive their own projects working like mature PhD students.

- Oxford: Shangzhe Wu (DPhil; 2 papers in ECCV’18; CVPR’20 best paper award)
- Stanford: Mikaela Angelina C. Uy (PhD), Qifeng Chen (PhD; CVPR’12), Haoye Cai (MS; ECCV’18), Guanzhi Wang (MS; ICCV’19), Xiaoyuan Ni (MS), Tianyuan Dai (MS; NeurIPS’23)
- Berkeley: Haozhi Qi (PhD)
- Dartmouth: Yuyao Zhang (PhD)
- Princeton: Jihoon Chung (PhD; CVPR’20), Hei Law, Linguang Zhang (PhD)
- Columbia: Dingzeyu Li (PhD; CVPR’12, ICCV’13), Hsuan-ru Yang (MS; ICCV’21)
- Carnegie Mellon: Qiao Gu (ICCV’19), Haoyang Fang, Chunyan Bai (ECCV’18), Heshen Liu, Ji Liu, Lin Zhang, Cheng-hsin Wu (ICCV’21), Boyu Liu, Ziyang Zheng, Lucen Zhao, Rui Yan, Hengyuan Hu, Rui Peng, Yushi Sun, Benren Hu (CVPR’23, ICCV’23, CVPR’24), Junkai Huang (CVPR’23, ICCV’23), Yanbo Xu (NeurIPS’23), Jianmeng Liu, Juntao Zhang (CVPR’24)
- UT Austin: Han Jiang (PhD)
- UIUC: Ho Kei Cheng (PhD; CVPR’20, CVPR’21, NeurIPS’21), Xiang Li (PhD; CVPR’20)

- UCSD: Jiarui Xu (PhD; ECCV'18, CVPR'20), Shaopeng Guo (PhD), Abhishek Gupta (MS)
- UCLA: Yanzhao Wang (MS)
- NYU: Shaoyu Chen (PhD)
- Toronto: Xiaohui Zeng (PhD; CVPR'19)
- Wisconsin: Zhenmei Shi, Hang Yin, Ruida Wang, Hao Wu (PhD)
- Maryland: Dehao Yuan (PhD)
- Northwestern: Haosen Sun (MS)
- ETHZ: Yinwei Du (MS)