Yu-Wing TAI

Associate Professor
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Research Interests: Computer Vision (Image/Video Editing/Enhancement, Segmentation, Matting, Human Pose Estimation, 3D Reconstruction, Object Detection, Recognition, etc.), Deep Learning

Education

PhD, School of Computing, 22 June 2009   **National University of Singapore**
Advisor: Dr. Michael Brown

MPhil, Computer Science, 31 August 2005   **Hong Kong Uni. of Science and Technology**
Advisor: Dr. Chi-Keung Tang

BEng, Computer Science, 30 June 2003   **Hong Kong Uni. of Science and Technology**
First Class Honors/Minor in Mathematics

Work Experience/Internship

2023 – Now	Associate Professor, Department of Computer Science, Dartmouth College, NH, United States
2020 – 2023	Senior Research Director, Video Technology, Kuaishou Technology, China
	--Lead a research team for video enhancement, video editing, and video quality assessment.
2020 – 2023	Adjunct Professor, CSE Department, HKUST, Hong Kong, China
2017 – 2020	Research Director (T14), Youtu Lab, Tencent, Shenzhen, China
	--Responsible for Image/Video Understanding in "Top Stories"&"Channels" in WeChat, 2017-2020
	--Lead the Visual Perception team of Autonomous Driving team in Tencent 2018-2019
	--Lead the team to develop CV industrial application solution in Tencent Cloud, 2018-2020
2017 – 2020	Adjunct Associate Professor, CSE Department, HKUST, Hong Kong, China
	--Lead 2M CNY (Around $300K USD) donation from Tencent to HKUST
	--Hire more than 30 student interns in Tencent
2015 – 2016	Principal Research Scientist, SenseTime Group Limited, Hong Kong, China
	--Lead a team to develop a dual camera solution for mobile platform
2014 – 2015	Associate Professor, Department of Electrical Engineering, KAIST
2013 – 2014	Assistant Professor, Department of Electrical Engineering, KAIST
2009 – 2013	Assistant Professor, Department of Computer Science, KAIST
2010 – 2010	Visiting Researcher, MSRA
2009 – 2009	Research Fellow, NUS
2007 – 2008	Internship in Microsoft Research Asia (MSRA), Beijing

Awards (Selected)

Kuaishou Technology Lhotse Award, Kuaishou Technology, Nov 2022 (For the achievement of 10 million DAU of Kuai-Ying APP)
Kuaishou Technology Lhotse Award, Kuaishou Technology, Nov 2021 (For the development of HDR technology)
Annual Technology Breakthrough Award, Tencent, 2017 (Gold) / 2019 (Bronze)
Tencent Corporate Vice President Award, 2018/2019
Top 50 outstanding research projects supported by National Research Foundation (NRF), 2012 (Note: NRF is Korean NSF)
KAIST 40th Anniversary Academic Award for Excellent Professors, 2011
Outstanding Reviewer Award, CVPR 2009
Microsoft Fellowship 2007

Academic Professional Activities (Selected)

Conference Organizing Committee:

　　Corporate Relationship Chair, IEEE/CVF Conference on Computer Vision and Pattern Recognition *(CVPR)*, 2018

Associate Editor:

　　IEEE Trans. on Pattern Analysis and Machine Intelligence (*TPAMI*), Dec 2021 - now

Area Chair / Senior Program Committee (Selected):

　　IEEE/CVF Conference on Computer Vision and Pattern Recognition *(CVPR)*, 2021, 2023

　　IEEE/CVF International Conference on Computer Vision *(ICCV)* 2011, 2015, 2017, 2019

　　European Conference on Computer Vision *(ECCV)* 2020, 2024

　　Thirty-seventh Conference on Neural Information Processing Systems *(NeurIPS)* 2023

　　International Joint Conferences on Artificial Intelligence (*IJCAI*) 2019, 2020, 2021, 2022, 2024

　　AAAI Conference on Artificial Intelligence (*AAAI*) 2021, 2022, 2024

　　International Conference on 3D Vision *(3DV)* 2015, 2016, 2017, 2020

Program Committee / Reviewer (Selected):

　　CVPR/ICCV/ECCV/ICML/NeurIPS/BMVC/ACCV/WACV/Siggraph/Siggraph Asia/Eurographics

Journal Reviewer (Selected):

　　TPAMI/IJCV/TIP/TOG/TVCG

IEEE Senior Member; ACM Member;

Funded Grants

*Previous Grants (*in KAIST, S. Korea, 1 USD ~= 1100 KRW as of 2015*):*

Super-resolution and Depth-of-field enhancement for light-field images (Co-PI)
- Samsung Industrial Project
- 72,640,000 won, 08.2014 ~ 07.2015
- 72,640,000 won, 08.2013 ~ 07.2014
- 72,640,000 won, 08.2012 ~ 07.2013

Development of a deep learning algorithm for salient region detections (Project PI)
- KAIST High Risk High Return Project (HRHRP)
- 50,000,000 won, 07.2015 ~ 12.2015

Shading-based Shape Refinement for Multi-view reconstruction from RGB-D images (Project PI)
- Microsoft & MKE (NIPA) Creative IT/SW Research project
- 70,000,000 won, 11.2013 ~ 08.2014

Sensor fusion imaging for the development of future robotic cameras (Project PI)
- Basic Research Program, NRF, Korea (***NRF in Korea is equivalent to NSF in US***)
- 48,350,000 won, 05.2013 ~ 04.2014
- 47,740,000 won, 05.2012 ~ 04.2013
- 48,740,000 won, 05.2011 ~ 04.2012

Egocentric video summarization based on localization, tracking, recognition and video frame quality assessment (Project PI)
- KUSTAR-KAIST Seed Money Project
- 70,000,000 won, 05.2013 ~ 12.2013

From Internet to Real-World Reconstruction and Applications (Project PI)
- KAIST Microsoft Collaboration Center (KMCC) Research Project
- 12,396,385 won, 06.2012 ~ 06.2013

Development of 3D imaging and processing algorithms for the next generation cameras (Project PI)
- KAIST High Risk High Return Project (HRHRP)
- 50,000,000 won, 01.2013 ~ 12.2013

Development of algorithms for video enhancement and editing using inputs from Xbox Kinect (Project PI)
- Microsoft & MKE (NIPA) Creative IT/SW Research project
- 60,000,000 won, 10.2011~6.2012

Development of total solution which converts 2D video into high quality 3D video (Co-PI)
- KOCCA
- 72,310,000 won, 07.2010 ~ 03.2011
- 50,594,981 won, 04.2011 ~ 03.2012
- 28,964,000 won, 04.2012 ~ 03.2013

Automatic/Semi-automatic algorithms for satellite image cloud cover assessment
- Korea Aerospace Research Institute (KARI)
- 19,000,000 won, 11.2010 ~ 01.2011

Recovery of motion blurred images under projective motion path (Project PI)
- KAIST seed grant
- 200,000,000 won, 06.2009~12.2012

Company Donations to HKUST (~450K USD in total)

Led a donation of 2M CNY (equivalent to approximately $300K USD) from Tencent to HKUST
Led a donation of 1M CNY (equivalent to approximately $150K USD) from Kuaishou Technology to HKUST

Teaching and Student Supervision

Please refer to the teaching statement for details

Publications

Selected Recent Publications:

1. Benran Hu, Junkai Huang, Yichen Liu, **Yu-Wing Ta**i, Chi-Keung Tang, *NeRF-RPN: A general framework for object detection in NeRFs*, IEEE Conference on Computer Vision and Pattern Recognition (***CVPR***), 2023
https://arxiv.org/abs/2211.11646

2. Qi Fan, Wei Zhuo, Chi-Keung Tang, **Yu-Wing Tai**, *Few-Shot Object Detection with Attention-RPN and Multi-Relation Detector*, IEEE Conference on Computer Vision and Pattern Recognition (***CVPR***), 2020.
https://arxiv.org/abs/1908.01998

3. Haoshu Fang, Shuqin Xie, **Yu-Wing Tai**, Cewu Lu, *RMPE: Regional multi-person pose estimation*, IEEE International Conference on Computer Vision (***ICCV***) 2017.
https://arxiv.org/abs/1612.00137

Journals (20 IEEE TPAMI, 2 ACM ToG, 5 IJCV, 9 IEEE TIP etc.)

1. Yanan Sun, Chi-Keung Tang, **Yu-Wing Tai**, *Semantic Image Matting: General and Specific Semantics*, International Journal of Computer Vision (***IJCV***), 131 (10), 2023.

2. Peng Zheng, Huazhu Fu, Deng-Ping Fan, Qi Fan, Jie Qin, **Yu-Wing Tai**, Chi-Keung Tang, Luc Van Gool, *GCoNet+: A Stronger Group Collaborative Co-Salient Object Detector*, IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 45, no. 9, pages 10929 - 10946, 2023.

3. Lei Ke, **Yu-Wing Tai**, Chi-Keung Tang, Occlusion-Aware Instance Segmentation Via BiLayer Network Architectures, IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), 2023.

4. Wenjie Pei, Xin Feng, Canmiao Fu, Qiong Cao, Guangming Lu, Yu-Wing Tai, *Learning Sequence Representations by Non-local Recurrent Neural Memory*, International Journal of Computer Vision (***IJCV***), 130 (8), 2532–2552, 2022.

5. Jinshan Pan, Deqing Sun, Jiawei Zhang, Jinhui Tang, Jian Yang, **Yu-Wing Tai**, Ming-Hsuan Yang, *Dual Convolutional Neural Networks for Low-Level Vision*, International Journal of Computer Vision (***IJCV***), 130 (6), 1440-1458, 2022.

6. Xian Wu, Chen Li, Shi-Min Hu, **Yu-Wing Tai**, *Hierarchical Generation of Human Pose with Part-Based Layer Representation*, IEEE Trans. on Image Processing (***TIP***), vol. 30, pages 7856-7855, 2021

7. Yang You, Yujing Lou, Ruoxi Shi, Qi Liu, **Yu-Wing Tai**, Lizhuang Ma, Weiming Wang, Cewu Lu, Prin/sprin: On extracting point-wise rotation invariant features, IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 44, no. 2, pages 9489-9502,2021.

8. Yongjie Zhu, Chen Li, Li Si, Boxin Shi, **Yu-Wing Tai**, *Hybrid Face Reflectance, Illumination, and Shape from a Single Image,* IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 44, no. 9, pages 5002-5015, 2021.

9. Yunan Liu, Shanshan Zhang, Jie Xu, Jian Yang, **Yu-Wing Tai**, *An Accurate and Lightweight Method for Human Body Image Super-Resolution*, IEEE Trans. on Image Processing ***(TIP)***, vol. 30, pages 2888-2897, 2021.

10. Weinong Wang, Wenjie Pei, Qiong Cao, Shu Liu, Guangming Lu, **Yu-Wing Tai**, *Push for Center Learning via Orthogonalization and Subspace Masking for Person Re-Identification,* IEEE Trans. on Image Processing ***(TIP)***, vol. 30, pages 907-920, 2020.

11. Jinshan Pan, Jiangxin Dong, Yang Liu, Jiawei Zhang, Jimmy Ren, Jinhui Tang, **Yu-Wing Tai**, Ming-Hsuan Yang, *Physics-Based Generative Adversarial Models for Image Restoration and Beyond,* IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 43, no. 7, pages 2449-2462, 2020.

12. Donghyeon Cho, Yasuyuki Matsushita, **Yu-Wing Tai**, In So Kweon, Semi-calibrated photometric stereo, IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 42, no. 1, pages 232-245, 2018.

13. Donghyeon Cho, **Yu-Wing Tai**, In So Kweon, Deep convolutional neural network for natural image matting using initial alpha mattes, IEEE Trans. on Image Processing ***(TIP)***, vol. 28, no. 3, pages 1054-1067, 2018.

14. Hae-Gon Jeon, Jaesik Park, Gyeongmin Choe, Jinsun Park, Yunsu Bok, **Yu-Wing Tai,** In So Kweon, *Depth from a Light Field Image with Learning-based Matching Costs,* IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol. 41, no. 2, pages 297-310, 2018.

15. Tae-Hyun Oh, Yasuyuki Matsushita, **Yu-Wing Tai**, In So Kweon, *Fast Randomized Singular Value Thresholding for Low-rank Optimization*, IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 40, no. 2, pages 376-391, 2018.

16. Gayoung Lee, **Yu-Wing Tai**, Junmo Kim，ELD-Net: An efficient deep learning architecture for accurate saliency detection, IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 40, no. 7, pages 1599-1610, 2018.

17. Seong-heum Kim, **Yu-Wing Tai**, Joon-Young Lee, Jaesik Park, In So Kweon, Category-Specific Salient View Selection via Deep Convolutional Neural Networks, Computer Graphics Forum (***CGF***), 36(8), 313-328, 2017.

18. Donghyeon Cho, Sunyeong Kim, **Yu-Wing Tai**, In So Kweon, *Automatic Trimap Generation and Consistent Matting for Light-Field Images*, IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 39, no. 8, pages 1504-1517, 2017.

19. Jaesik Park, Sudipta N. Sinha, Yasuyuki Matsushita, **Yu-Wing Tai**, In So Kweon, *Robust Multiview Photometric Stereo using Planar Mesh Parameterization*, IEEE Transactions on Pattern Analysis and Machine Intelligence (***TPAMI***), vol 39, no. 8, pages 1591-1604, 2017.

20. Gyeongmin Choe, Jaesik Park, **Yu-Wing Tai**, In So Kweon, *Refining Geometry from Depth Sensors using IR Shading Images*, International Journal of Computer Vision (***IJCV***), 122 (1), 1-16, 2017.

21. Minhaeng Lee, **Yu-Wing Tai**, *Robust All-in-focus Super-Resolution for Focal Stack Photography,* IEEE Trans. on Image Processing ***(TIP)***, vol 25, no. 4, pages 1887-1897, 2016.

22. Seong-Heum Kim, **Yu-Wing Tai**, Jaesik Park, In So Kweon, *Multi-view Object Extraction with Fractional Boundaries*, IEEE Trans. on Image Processing ***(TIP)***, vol. 25, no. 8, pages 3639-3654, 2016.

23. Jiwhan Kim, Dongyoon Han, **Yu-Wing Tai**, Junmo Kim, *Salient Region Detection via High-Dimensional Color Transform and Local Spatial Support*, IEEE Trans. on Image Processing ***(TIP)***, vol. 25, no. 1, pages 9-23, 2016.

24. Tae-Hyun Oh, **Yu-Wing Tai**, Jean-Chales Bazin, Hyeongwoo Kim, In So Kweon, *Partial Sum Minimization of Singular Values in Robust PCA: Algorithm and Applications*, IEEE Trans. on Pattern Analysis and Machine Intelligence ***(TPAMI)***, vol. 38, no. 4, pages 744-758, 2016.

25. Jae-Hyuck Park, **Yu-Wing Tai**, *A simulation-based method for vehicle motion prediction*, Computer Vision and Image Understanding (***CVIU***), vol 136, no. 7, pages 79-91, 2015.

26. Taehyun Oh, Joon-Young Lee, **Yu-Wing Tai**, In So Kweon, *Robust High Dynamic Range Imaging by Rank Minimization*, IEEE Trans. on Pattern Analysis and Machine Intelligence ***(TPAMI)***, vol 37, no. 6, pages 1219-1232, 2015.

27. Jaesik Park, Hyeongwoo Kim, **Yu-Wing Tai**, Michael S. Brown, In So Kweon, *High Quality Depth Map Upsampling and Completion for RGB-D cameras*, IEEE Trans. on Image Processing ***(TIP)***, vol. 23, no. 12, pages 5559-5572, 2014.

28. Williem, **Yu-Wing Tai**, In Kyu Park, *Accurate and real-time depth video acquisition using Kinect-stereo camera fusion*, Optical Engineering, vol. 53, no. 4, 043110, 2014.

29. Sou-Young Jin, Ho Jin Choi, **Yu-Wing Tai**, *A Randomized Algorithm for Natural Object Colorization*, Computer Graphics Forum, (Special Issue on *Eurographics*), 33(2), 2014.

30. Naejin Kong, **Yu-Wing Tai**, Joseph Sung Yong Shin, *A Physically-based Approach to Reflection Separation: from Physical Modeling to Constrained Optimization*, IEEE Trans. on Pattern Analysis and Machine Intelligence *(TPAMI)*, vol. 36, no. 2, pages 209-221, 2014.

31. **Yu-Wing Tai**, Xiaogang Chen, Sunyeong Kim, Seon Joo Kim, Feng Li, Jie Yang, Jingyi Yu, Yasuyuki Matsushita, Michael S. Brown, *Nonlinear Camera Response Functions and Image Deblurring: Theoretical Analysis and Practice*, IEEE Trans. on Pattern Analysis and Machine Intelligence *(TPAMI)*, vol. 35, no. 10, pages 2498-2512, 2013.

32. Zheng Lu, **Yu-Wing Tai**, Fanbo Deng, Moshe Ben-Ezra, Michael S. Brown, *A 3D Imaging Framework Based on High-Resolution Photometric-Stereo and Low-Resolution Depth*, International Journal of Computer Vision (*IJCV*), vol. 102, no. 1-3, pages 18-32, 2013.

33. Sunghyun Cho, Hojin Cho, **Yu-Wing Tai**, Seungyong Lee, Registration Based Non-Uniform Motion Deblurring, Computer Graphics Forum (Special Issue on *Pacific Graphics*), 31(7), 2183-2192, 2012.

34. Kunho Kim, Mohammad K. Hasan, Jae-Pil Heo, **Yu-Wing Tai**, Sung-Eui Yoon, Probabilistic Cost Model for Nearest Neighbor Search in Image Retrieval, Computer Vision and Image Understanding (*CVIU*), vol. 116, no. 9, pages 991-998, 2012.

35. Yong Sang Chia, Shaojie Zhuo, Raj Kumar Gupta, **Yu-Wing Tai**, Siu-Yeung Cho, Ping Tan, Stephen Lin, *Semantic Colorization with Internet Images*, ACM Transaction on Graphics (*TOG/SIGGRAPH Asia*), 30(6):156, 2011.

36. Naejin Kong, **Yu-Wing Tai**, Sung Yong Shin, *High-quality Reflection Separation using Polarized Images*, IEEE Trans. on Image Processing *(TIP)*, vol. 20, no. 12, pages 3393 – 3405, 2011.

37. Haiting Lin, **Yu-Wing Tai**, Michael S. Brown, *Motion Regularization for Matting motion blurred Objects,* IEEE Trans. on Pattern Analysis and Machine Intelligence *(TPAMI)*, vol. 33, no. 11, pages 2329-2336, 2011.

38. **Yu-Wing Tai**, Ping Tan, Michael S. Brown, *Richardson-Lucy Deblurring for Scenes under Projective Motion Path*, IEEE Trans. on Pattern Analysis and Machine Intelligence *(TPAMI)*, vol. 33, no. 8, pages 1603-1618, 2011.

39. **Yu-Wing Tai**, Hao Du, Michael S. Brown, Stephen Lin, *Correction of Spatially Varying Image and Video Blur using a Hybrid Camera.* IEEE Trans. on Pattern Analysis and Machine Intelligence *(TPAMI)*, vol. 32, no.6, pages 1012-1028, 2010.

40. **Yu-Wing Tai**, Huixuan Tang, Michael S. Brown, Stephen Lin, *Detail Recovery from Single-image Defocus Blur*, IJSP Trans. on Computer Vision and Applications, March 2009 (invited submission)

41. **Yu-Wing Tai**, Michael S. Brown, Chi-Keung Tang, Heung-Yeung Shum, *Texture Amendment: Reducing Texture Distortion in Constrained Parameterization.* ACM Trans. on Graphics (*TOG/SIGGRAPH Asia*), 27(5): 136, 2008.

42. **Yu-Wing Tai**, Jiaya Jia, Chi-Keung Tang, S*oft Color Segmentation and its Applications.* IEEE Transactions on Pattern Analysis and Machine Intelligence *(TPAMI)*, vol. 29, no. 9, pages 1520-1537, 2007.

43. Jiaya Jia, **Yu-Wing Tai**, Tai-Pang Wu, Chi-Keung Tang, *Video Repairing under Variable Illumination Using Cyclic Motions.* IEEE Trans. on Pattern Analysis and Machine Intelligence *(TPAMI)*, vol. 28, no. 5, pages 832-839, 2006.

Conferences (50 CVPR, 18 ICCV, 21 ECCV, 6 NeurIPS, etc.)

1. Lei Ke, Mingqiao Ye, Martin Danelljan, Yifan liu, **Yu-Wing Tai**, Chi-Keung Tang, Fisher Yu, *Segment Anything in High Quality*, Thirty-seventh Conference on Neural Information Processing Systems (*NeurIPS*), 2023.

2. Hao Zhang, Tianyuan Dai, Yanbo Xu, **Yu-Wing Tai**, Chi-Keung Tang, *FaceDNeRF: Semantics-Driven Face Reconstruction, Prompt Editing and Relighting with Diffusion Models*, Thirty-seventh Conference on Neural Information Processing Systems (***NeurIPS***), 2023.

3. Haotong Qin, Lei Ke, Xudong Ma, Martin Danelljan, **Yu-Wing Tai**, Chi-Keung Tang, Xianglong Liu, Fisher Yu, *BiMatting: Efficient Video Matting via Binarization*, Thirty-seventh Conference on Neural Information Processing Systems (***NeurIPS***), 2023.

4. Yichen Liu, Benran Hu, Junkai Huang, **Yu-Wing Tai**, Chi-Keung Tang, *Instance Neural Radiance Field*, IEEE International Conference on Computer Vision (***ICCV***), 2023.

5. Yue Xu, Yong-Lu Li, Zhemin Huang, Michael Xu Liu, Cewu Lu, **Yu-Wing Tai**, Chi-Keung Tang, *EgoPCA: A New Framework for Egocentric Hand-Object Interaction Understanding*, IEEE International Conference on Computer Vision (***ICCV***), 2023.

6. Mingqiao Ye, Lei Ke, Siyuan Li, **Yu-Wing Tai**, Chi-Keung Tang, Martin Danelljan, Fisher Yu, *Cascade-DETR: Delving into High-Quality Universal Object*, IEEE International Conference on Computer Vision (***ICCV***), 2023.

7. Songlin Tang, Wenjie Pei, Xin Tao, Tanghui Jia, Guangming Lu, **Yu-Wing Tai**, *Scene-Generalizable Interactive Segmentation of Radiance Fields*, ACM International Conference on Multimedia (***ACMMM***), 2023.

8. Huimin Zeng, Weinong Wang, Xin Tao, Zhiwei Xiong, **Yu-Wing Tai**, Wenjie Pei, *Feature Decoupling-Recycling Network for Fast Interactive Segmentation*, ACM International Conference on Multimedia (***ACMMM***), 2023.

9. Benran Hu, Junkai Huang, Yichen Liu, **Yu-Wing Tai**, Chi-Keung Tang, *NeRF-RPN: A general framework for object detection in NeRFs*, IEEE Conference on Computer Vision and Pattern Recognition (***CVPR***), 2023.

10. Lei Ke, Martin Danelljan, Henghui Ding, **Yu-Wing Tai**, Chi-Keung Tang, Fisher Yu, Mask-Free Video Instance Segmentation, IEEE Conference on Computer Vision and Pattern Recognition (***CVPR***), 2023.

11. Yanan SUN, Chi-Keung Tang, **Yu-Wing Tai**, Ultrahigh Resolution Image/Video Matting with Spatio-Temporal Sparsity, IEEE Conference on Computer Vision and Pattern Recognition (***CVPR***), 2023.

12. Takashi Isobe, Yingwei Wang, Xu Jia, Xin Tao, Huchuan Lu, **Yu-Wing Tai**, Compression-Aware Video Super-Resolution, IEEE Conference on Computer Vision and Pattern Recognition (***CVPR***), 2023.

13. Qi Fan, Mattia Segu, **Yu-Wing Tai**, Fisher Yu, Chi-Keung Tang, Bernt Schiele, Dengxin Dai, *Towards Robust Object Detection Invariant to Real-World Domain Shifts*, International Conference on Learning Representations (***ICLR***), 2023.

14. Xinhang Liu, Jiaben Chen, Huai Yu, **Yu-Wing Tai**, Chi-Keung Tang, *Unsupervised Multi-View Object Segmentation Using Radiance Field Propagation*, Thirty-sixth Conference on Neural Information Processing Systems (***NeurIPS***), 2022.

15. Lei Ke, Henghui Ding, Martin Danelljan, **Yu-Wing Tai**, Chi-Keung Tang, Fisher Yu, *Video Mask Transfiner for High-Quality Video Instance Segmentation,* European Conference on Computer Vision (***ECCV***), 2022.

16. Qi Fan, Chi-Keung Tang, **Yu-Wing Tai**, *Few-Shot Object Detection with Model Calibration,* European Conference on Computer Vision (***ECCV***), 2022.

17. Qi Fan, Wenjie Pei, **Yu-Wing Tai**, Chi-Keung Tang, *Self-support few-shot semantic segmentation,* European Conference on Computer Vision (***ECCV***), 2022.

18. Qi Fan, Chi-Keung Tang, **Yu-Wing Tai**, *Few-shot video object detection,* European Conference on Computer Vision (***ECCV***), 2022.

19. Gang He, Kepeng Xu, Li Xu, Chang Wu, Ming Sun, Xing Wen, **Yu-Wing Tai**, *SDRTV-to-HDRTV via hierarchical dynamic context feature mapping*, ACM International Conference on Multimedia (***ACMMM***), 2022.

20. Chen Wang, Xian Wu, Yuan-Chen Guo, Song-Hai Zhang, **Yu-Wing Tai**, Shi-Min Hu, *NeRF-SR: High Quality Neural Radiance Fields using Super-sampling*, ACM International Conference on Multimedia (**ACMMM**), 2022.

21. Jiayin Cai, Changlin Li, Xin Tao, **Yu-Wing Tai**, *Image Multi-Inpainting via Progressive Generative Adversarial Networks*, ACM International Conference on Multimedia (**ACMMM**), 2022.

22. Yanan Sun, Chi-Keung Tang, **Yu-Wing Tai**, *Human Instance Matting via Mutual Guidance and Multi-Instance Refinement*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.

23. Xinpeng Liu, Yong-Lu Li, Xiaoqian Wu, **Yu-Wing Tai**, Cewu Lu, Chi-Keung Tang, *Interactiveness Field in Human-Object Interactions*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.

24. Takashi Isobe, Xu Jia, Xin Tao, Changlin Li, Ruihuang Li, Yongjie Shi, Jing Mu, Huchuan Lu, **Yu-Wing Tai**, *Look Back and Forth: Video Super-Resolution with Explicit Temporal Difference Modeling*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.

25. Lei Ke, Martin Danelljan, Xia Li, **Yu-Wing Tai**, Chi-Keung Tang, Fisher Yu, *Mask Transfiner for High-Quality Instance Segmentation*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.

26. Li Xu, Gang He, Jinjia Zhou, Jie Lei, Weiying Xie, Yunsong Li, **Yu-Wing Tai**, *Transcoded Video Restoration by Temporal Spatial Auxiliary Network*, The AAAI Conference on Artificial Intelligence (**AAAI**), 2022.

27. Lei Ke, Xia Li, Martin Danelljan, **Yu-Wing Tai**, Chi-Keung Tang, Fisher Yu, *Prototypical Cross-Attention Networks for Multiple Object Tracking and Segmentation*, Thirty-fifth Conference on Neural Information Processing Systems (**NeurIPS**), 2021.

28. Ho Kei Cheng, **Yu-Wing Tai**, Chi-Keung Tang, *Rethinking Space-Time Networks with Improved Memory Coverage for Efficient Video Object Segmentation*, Thirty-fifth Conference on Neural Information Processing Systems (**NeurIPS**), 2021.

29. Lei Ke, **Yu-Wing Tai**, Chi-Keung Tang, *Occlusion-Aware Video Object Inpainting*, IEEE International Conference on Computer Vision (**ICCV**), 2021.

30. Jihoon Chung, Cheng-hsin Wuu, Hsuan-ru Yang, **Yu-Wing Tai**, Chi-Keung Tang, *HAA500: Human-Centric Atomic Action Dataset with Curated Videos*, IEEE International Conference on Computer Vision (**ICCV**), 2021.

31. Ho Kei Cheng, **Yu-Wing Tai**, Chi-Keung Tang, *Modular Interactive Video Object Segmentation: Interaction-to-Mask, Propagation and Difference-Aware Fusion*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021.

32. Yanan Sun, Chi-Keung Tang, **Yu-Wing Tai**, *Semantic Image Matting*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021.

33. Yanan Sun, Guanzhi Wang, Qiao Gu, Chi-Keung Tang, **Yu-Wing Tai**, *Deep Video Matting via Spatio-Temporal Alignment and Aggregation*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021.

34. Lei Ke, **Yu-Wing Tai**, Chi-Keung Tang, *Deep Occlusion-Aware Instance Segmentation with Overlapping BiLayers*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021.

35. Qi Fan, Deng-Ping Fan, Huazhu Fu, Chi-Keung Tang, Ling Shao, **Yu-Wing Tai**, *Group Collaborative Learning for Co-Salient Object Detection*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021.

36. Lei Ke, Shichao Li, Yanan SUN, **Yu-Wing Tai**, Chi-Keung Tang, *GSNet: Joint Vehicle Pose and Shape Reconstruction with Geometrical and Scene-aware Supervision,* European Conference on Computer Vision (**ECCV**), 2020.

37. Ran Chen, Yong Liu, Mengdan Zhang, Shu Liu, Bei Yu, **Yu-Wing Tai**, *Dive Deeper into Box for Object Detection,* European Conference on Computer Vision (**ECCV**), 2020.

38. Ka Leong CHENG, Zhaoyang Yang, Qifeng Chen, **Yu-Wing Tai**, *Fully Convolutional Networks for Continuous Sign Language Recognition,* European Conference on Computer Vision (***ECCV***), 2020.

39. Hongwei Yi, Zizhuang Wei, Mingyu Ding, Runze Zhang, Yisong Chen, Guoping Wang, **Yu-Wing Tai**, *Pyramid Multi-view Stereo Net with Self-adaptive View Aggregation,* European Conference on Computer Vision (***ECCV***), 2020.

40. Hongwei Yi, Zizhuang Wei, Jianfeng Yan, Mingyu Ding, Runze Zhang, Yisong Chen, Guoping Wang, **Yu-Wing Tai**, *Dense Hybrid Recurrent Multi-view Stereo Net with Dynamic Consistency Checking*, European Conference on Computer Vision (***ECCV***), 2020.

41. Qi Fan, Lei Ke, Wenjie Pei, Chi-Keung Tang, **Yu-Wing Tai,** *Commonality-Parsing Network across Shape and Appearance for Partially Supervised Instance Segmentation,* European Conference on Computer Vision (***ECCV***), 2020.

42. Xuhua Huang, Jiarui Xu, **Yu-Wing Tai**, Chi-Keung Tang, *Fast Video Object Segmentation with Temporal Aggregation Network and Dynamic Template Matching*, IEEE Conference on Computer Vision and Pattern Recognition (***CVPR***), 2020.

43. Ho Kei Cheng, Jihoon Chung, **Yu-Wing Tai**, Chi-Keung Tang, *CascadePSP: Toward Class-Agnostic and Very High-Resolution Segmentation via Global and Local Refinement*, IEEE Conference on Computer Vision and Pattern Recognition (***CVPR***), 2020.

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