Tsung-Wei Ke

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https://twke18.github.io/

Overview

I am interested in the trio of action, perception, and cognition. My graduate thesis centered on understanding visual structures and contexts embedded in the image. I have studied hierarchical segmentation and recognition with unsupervised/weakly-supervised approaches. Recently, I have been working on building manipulation policies with imitation learning. I want to explore robot generalist learning for future research.

Appointments

Assistant Professor, CSIE, National Taiwan University, Taipei — 2024–present

Postdoctoral Researcher, MLD, Carnegie Mellon University, Pittsburgh — 2022–2024
Supervised by Prof. Katerina Fragkiadaki

Research Intern, Waymo LLC, Mountain View — May 2021–Aug 2021
Supervised by Dr. Alex Zhu

Graduate Researchers, University of California, Berkeley — 2018–2021
Supervised by Prof. Stella Yu

Education

Ph.D. Vision Science, University of California, Berkeley — 2018–2022

B.S. Chemical Engineering, National Taiwan University — 2009–2013

Publications

[1] Tsung-Wei Ke*, Nikolaos Gkanatsios* and Katerina Fragkiadaki. 3D Diffuser Actor: Policy Diffusion with 3D Scene Representations. *arXiv:2402.10885*

[2] Brian Yang, Huangyuan Su, Nikolaos Gkanatsios, Tsung-Wei Ke, Ayush Jain, Jeff Schneider, Katerina Fragkiadaki. Diffusion-ES: Gradient-free Planning with Diffusion for Autonomous Driving and Zero-Shot Instruction Following. *CVPR 2024*

[3] Tsung-Wei Ke*, Sangwoo Mo* and Stella X. Yu. Learning Hierarchical Image Segmentation For Recognition and By Recognition. *International Conference on Learning Representations (ICLR), May 2024, https://openreview.net/forum?id=IRcv4yFX6z*

[4] M. Prabhudesai*, **T.W. Ke***, A. Li, Deepak Pathak, and Katerina Fragkiadaki. Test-time Adaptation of Discriminative Models via Diffusion Generative Feedback. *Neural Information Processing Systems (NeuRIPS) 37, Dec. 2023, https://openreview.net/forum?id=gUTVpByfVX*

[5] **T.W. Ke**, J.J. Hwang, Y. Guo, X. Wang and Stella X. Yu. Unsupervised Hierarchical Semantic Segmentation with Multiview Cosegmentation and Clustering Transformers. *in Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), July 2022, pp. 2571-2581.*

[6] **Tsung-Wei Ke**, Jyh-Jing Hwang and Stella X. Yu. Universal Weakly Supervised Segmentation by Pixel-to-Segment Contrastive Learning. *International Conference on Learning Representations (ICLR), April 2021, https://openreview.net/forum?id=N33d7wjgzde*

[7] Jyh-Jing Hwang*, **Tsung-Wei Ke***, Jianbo Shi and Stella X. Yu. Adversarial Structure Matching for Structured Prediction Tasks. *in Proceeding of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), Jun. 2019, pp.4056-4065*

[8] **Tsung-Wei Ke***, Jyh-Jing Hwang*, Ziwei Liu and Stella X. Yu. Adaptive Affinity Field for Semantic Segmentation. *In Proceedings of the European conference on computer vision (ECCV), Sep. 2018, pp. 587-602.*

[9] **T.W. Ke**, Aaron S Brewster, Stella X Yu, Daniela Ushizima, Chao Yang, Nicholas K Sauter. A convolutional neural network-based screening tool for X-ray serial crystallography. *Journal of*

synchrotron radiation, 25(3), pp. 655-670

[10] **Tsung-Wei Ke**, Michael Maire and Stella X. Yu. MultiGrid Neural Architecture. *In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), July 2017, pp. 6665-6673*

[11] **Tsung-Wei Ke**, Stella X. Yu and David Whitney. Mooney Face Classification And Prediction By Learning Across Tone. *In 2017 IEEE international conference on image processing (ICIP), pp. 2025-2029*

[12] **Tsung-Wei Ke**, Stella X. Yu and David Whitney. Mooney Faces from Photos. *Journal of Vision 17.10, 2017, pp. 915-915.*

[13] **Tsung-Wei Ke**, Che-Wei Lin, Tyng-Luh Liu, and Davi Geiger. Variational Convolutional Networks for Human-Centric Annotations. *In Computer Vision–ACCV 2016: 13th Asian Conference on Computer Vision, Taipei, Taiwan, November 20-24, 2016, Revised Selected Papers, Part IV 13, pp. 120-135*

[14] **Tsung-Wei Ke**, and Tyng-Luh Liu. Recursive reduction net for large-scale high-dimensional data. *In 2016 IEEE International Conference on Image Processing (ICIP), pp. 1903-1907*