








Wei-Chen Chiu 邱維辰


Education

- 2011–2016  **Doctor of Engineering**, *Max Planck Institute for Informatics*, Saarbrücken, Germany.
Department: Computer Vision and Multimodal Computing
Advisor: Dr. Mario Fritz
Thesis: Bayesian Non-Parametrics for Multi-Modal Segmentation
- 2008–2009  **Master of Science**, *National Chiao Tung University*, Hsinchu, Taiwan.
Institute of Multimedia Engineering, College of Computer Science
Advisor: Prof. Jen-Hui Chuang, Co-advisor: Prof. Sheng-Jyh Wang
Thesis: Probabilistic Modeling of Dynamic Traffic Flow between Non-Overlapping FOVs.
- 2004–2008  **Bachelor of Science**, *National Chiao Tung University*, Hsinchu, Taiwan.
Electrical Engineering & Computer Science Undergraduate Honors Program
- Fall 2006  **Exchange Student**, *Carnegie Mellon University*, Pittsburgh, USA.
Electrical and Computer Engineering (ECE)


Honor and Distinctions


- 2022  Young Scholars' Creativity Award
Foundation for the Advancement of Outstanding Scholarship, Taiwan
- 2022  K. T. Li Young Researcher Award
Institute of Information and Computing Machinery, Taiwan
- 2021  CIEE Outstanding Young Electrical Engineer Award
The Chinese Institute of Electrical Engineering (CIEE), Taiwan
- 2021  NCTU EECS Outstanding Young Scholar Award
National Chiao Tung University, Taiwan
- 2018  Young Scholar Fellowship
Ministry of Science and Technology, Taiwan


2017  cacaFly Junior Chair Professor
cacaFly Intl. Media


2017  Frank S Chen Junior Chair Professor
National Chiao Tung University, Taiwan


Academic and Working Experiences


05.2021 – present  **Joint Appointment Research Fellow**, *Industrial Technology Research Institute*, Hsinchu, Taiwan.
Mechanical and Mechatronics Systems Laboratory


08.2020 – present  **Associate Professor**, *Department of Computer Science, National Chiao Tung University*, Hsinchu, Taiwan.
My Research Group: Enriched Vision Applications Laboratory (Room 548, EC Building)


04.2019 – 09.2019  **Consultant**, *Viscovery Pte. Ltd.*, Taipei, Taiwan.
Topic: Computer vision and machine learning algorithm development


08.2017 – 07.2020  **Assistant Professor**, *Department of Computer Science, National Chiao Tung University*, Hsinchu, Taiwan.
My Research Group: Enriched Vision Applications Laboratory (Room 548, EC Building)


02.2017 – 07.2017  **Postdoctoral Researcher**, *Multimedia and Machine Learning Lab, Research Center for Information Technology Innovation (CITI), Academia Sinica*, Taipei, Taiwan.
Laboratory Director: Dr. Yu-Chiang Frank Wang

08.2016 – 01.2017  **Computer Vision Research Scientist**, *Viscovery Pte. Ltd.*, Taipei, Taiwan.
Topic: Developing deep learning algorithms for applications related to video content analysis, e.g. face/object/scene detection and recognition

Spring 2011  **Internship**, *Max Planck Institute for Informatics*, Saarbrücken, Germany.
Department: Computer Vision and Multimodal Computing
Advisor: Dr. Mario Fritz, Dr. Ulf Blanke
Topic: Improving Kinect's depth by cross-modal stereo

Winter 2010  **Engineer**, *Largan Precision Co. Ltd.*, Taichung, Taiwan.
Department: Image Processing
Duty: Algorithm research & design for softwares of computational photography

09.2009–09.2010  **Corporal (Compulsory)**, *R.O.C Army*, Taiwan.
Unit: 43 Artillery Command, 8th Army Corps
Position: Assistant field artillery leader of M114 155mm Howitzer

Fall 2007  **Internship**, *Industrial Technology Research Institute*, Hsinchu, Taiwan.
Department: Computer Vision & Image Processing, Advanced Technology Center
Head: Dr. Ching-Chun Huang
Topic: Facial feature tracking and animation effect presentation

Academic Services

- Organizer Special Session Chair, the 31st IPPR Conference on Computer Vision, Graphics, and Image Processing (CVGIP), 2018
Industrial Liaison, the 16-th IEEE International Conference on Advanced Video and Signal-based Surveillance (AVSS), 2019
Local Chair, the 33rd IPPR Conference on Computer Vision, Graphics, and Image Processing (CVGIP), 2020
Doctor Symposium Chair, ACM International Conference on Multimedia in Asia (ACM MM Asia), 2020
- Area Chair the 16-th IEEE International Conference on Advanced Video and Signal-based Surveillance (AVSS), 2019
- Senior Program Committee Member the 37th AAI Conference on Artificial Intelligence (AAI), 2023

Full List of Publications ([↗ Google Scholar profile](#))

International Journal Papers

- Fu-En Wang, Yu-Hsuan Yeh, Yi-Hsuan Tsai, **Wei-Chen Chiu**, and Min Sun, "BiFuse++: Self-supervised and Efficient Bi-projection Fusion for 360 Depth Estimation," *IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)*, 2022.
- Yu-Ying Yeh, Yeng-Cheng Liu, **Wei-Chen Chiu**, and Yu-Chiang Frank Wang, "Static2Dynamic: Video Inference from a Deep Glimpse," *IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI)*, 2020.

International Conference Papers

1. Shin-I Cheng, Yu-Jie Chen, **Wei-Chen Chiu**, Hung-Yu Tseng, and Hsin-Ying Lee, "Adaptively-Realistic Image Generation from Stroke and Sketch with Diffusion Model," in *IEEE Winter Conference on Applications of Computer Vision (WACV)*, Waikoloa, HI, USA, January 3-7, 2023.
2. Yu-Hsuan Li, Tzu-Yin Chao, Ching-Chun Huang, Pin-Yu Chen, and **Wei-Chen Chiu**, "Make an Omelette with Breaking Eggs: Zero-Shot Learning for Novel Attribute Synthesis," in *Annual Conference on Neural Information Processing Systems (NeurIPS)*, New Orleans, LA, USA, November 26-December 4, 2022.
3. Yu-Ting Yen, Chia-Ni Lu, **Wei-Chen Chiu**, and Yi-Hsuan Tsai, "3D-PL: Domain Adaptive Depth Estimation with 3D-aware Pseudo-Labeling," in *European Conference on Computer Vision (ECCV)*, Tel Aviv, Israel, October 23-27, 2022.
4. Yu-Jie Chen, Shin-I Cheng, **Wei-Chen Chiu**, Hung-Yu Tseng, and Hsin-Ying Lee, "Vector Quantized Image-to-Image Translation," in *European Conference on Computer Vision (ECCV)*, Tel Aviv, Israel, October 23-27, 2022.
5. Wei-Jan Ko, Chen-Yi Chiu, Yu-Liang Kuo, and **Wei-Chen Chiu**, "RPG: Learning Recursive Point Cloud Generation," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Kyoto, Japan, October 23-27, 2022.
6. Yu-Liang Kuo, Wei-Jan Ko, Chen-Yi Chiu, and **Wei-Chen Chiu**, "Improving Single-View Mesh Reconstruction for Unseen Categories via Primitive-Based Representation and Mesh Augmentation,"

- in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Kyoto, Japan, October 23-27, 2022.
7. Meng-Shiun Tsai, Pei-Ze Chiang, Yi-Hsuan Tsai, and **Wei-Chen Chiu**, "Self-Supervised Feature Learning from Partial Point Clouds via Pose Disentanglement," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Kyoto, Japan, October 23-27, 2022.
 8. Ting-Wei Chang, **Wei-Chen Chiu**, and Ching-Chun Huang, "Find the Way Back: Invertible Kernel Estimator for Blind Image Super-Resolution," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Virtual, May 7-13, 2022.
 9. Chia-Hsiang Kao, **Wei-Chen Chiu**, and Pin-Yu Chen, "MAML is a Noisy Contrastive Learner in Classification," in *International Conference on Learning Representations (ICLR)*, Virtual, April 25-29, 2022.
 10. Pei-Ze Chiang, Meng-Shiun Tsai, Hung-Yu Tseng, Wei-Sheng Lai, and **Wei-Chen Chiu**, "Stylizing 3D Scene via Implicit Representation and HyperNetwork," in *IEEE Winter Conference on Applications of Computer Vision (WACV)*, Waikoloa, HI, USA, January 4-8, 2022.
 11. Yi-Lun Lee, Yen-Chung Chen, Min-Yuan Tseng, Yi-Hsuan Tsai, and **Wei-Chen Chiu**, "Learning to Hide Residual for Boosting Image Compression," in *British Machine Vision Conference (BMVC)*, Virtual, November 22-25, 2021.
 12. Jia-Ren Chang, Yong-Sheng Chen, and **Wei-Chen Chiu**, "Learning Facial Representations from the Cycle-consistency of Face," in *International Conference on Computer Vision (ICCV)*, Virtual, October 11-17, 2021.
 13. Zunzhi You, Yi-Hsuan Tsai, **Wei-Chen Chiu**, and Guanbin Li, "Towards Interpretable Deep Networks for Monocular Depth Estimation," in *International Conference on Computer Vision (ICCV)*, Virtual, October 11-17, 2021.
 14. Yu-Chun Chen, Keui-Chun Kao, Yu-Jen Lee, Faye Shih, **Wei-Chen Chiu**, and Yung-Ju Chang, "Killing-Time Detection from Smartphone Screenshots," in *ACM International Joint Conference on Pervasive and Ubiquitous Computing and ACM International Symposium on Wearable Computers (UbiComp-ISWC) Posters and Demos*, Virtual, September 21-26, 2021.
 15. Yu-Ting Yen, Chia-Chi Cheng, and **Wei-Chen Chiu**, "Inverse Halftone Colorization: Making Halftone Prints Color Photos," in *IEEE International Conference on Image Processing (ICIP)*, Anchorage, Alaska, USA, September 19-22, 2021.
 16. Chia-Hsiang Kao, Yong-Sheng Chen, Li-Fen Chen, and **Wei-Chen Chiu**, "Demystifying T1-MRI to FDG¹⁸-PET Image Translation via Representational Similarity," in *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Virtual, September 27-October 1, 2021.
 17. Chiu-Chou Lin, **Wei-Chen Chiu**, and I-Chen Wu, "An Unsupervised Video Game Playstyle Metric via State Discretization," in *37th Conference on Uncertainty in Artificial Intelligence (UAI)*, Virtual, July 27-30, 2021.
 18. Sheng-Feng Yu and **Wei-Chen Chiu**, "Boosting Semi-Supervised Anomaly Detection via Contrasting Synthetic Images," in *International Conference on Machine Vision Applications (MVA)*, Virtual, July 25-27, 2021.
 19. Chia-Ni Lu, Ya Chu Chang, and **Wei-Chen Chiu**, "Bridging the Visual Gap: Wide-Range Image Blending," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Virtual, June 19-25, 2021.
 20. Fu-En Wang, Yu-Hsuan Yeh, Min Sun, **Wei-Chen Chiu**, and Yi-Hsuan Tsai, "LED²-Net: Monocular

- 360 Layout Estimation via Differentiable Depth Rendering," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), Virtual, June 19-25, 2021*.
21. Bolivar Solarte, Chin-Hsuan Wu, Kuan-Wei Lu, Yi-Hsuan Tsai, **Wei-Chen Chiu**, and Min Sun, "Robust 360-8PA: Redesigning The Normalized 8-point Algorithm for 360-FoV Images," in *IEEE International Conference on Robotics and Automation (ICRA), Xian, China, May 30-June 5, 2021*.
 22. Chun-Chih Teng, Pin-Yu Chen, and **Wei-Chen Chiu**, "Domain Adaptation for Learning Generator from Paired Few-Shot Data," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Toronto, Canada, June 6-11, 2021*.
 23. Min-Yuan Tseng, Yen-Chung Chen, Yi-Lun Lee, Wei-Sheng Lai, Yi-Hsuan Tsai, and **Wei-Chen Chiu**, "Dual-Stream Fusion Network for Spatiotemporal Video Super-Resolution," in *IEEE Winter Conference on Applications of Computer Vision (WACV), Virtual, January 5-9, 2021*.
 24. Ya-Chu Chang, Chia-Ni Lu, Chia-Chi Cheng, and **Wei-Chen Chiu**, "Single Image Reflection Removal with Edge Guidance, Reflection Classifier, and Recurrent Decomposition," in *IEEE Winter Conference on Applications of Computer Vision (WACV), Virtual, January 5-9, 2021*.
 25. Tsai-Jyun Fan, Chien-Yu Lu, **Wei-Chen Chiu**, Li Su, and Che-Rung Lee, "Timbre-enhanced Multi-modal Music Style Transfer with Domain Balance Loss," in *International Conference on Technologies and Applications of Artificial Intelligence (TAAI), Taipei, Taiwan, December 3-5, 2020*.
 26. Cheng-Hsun Lei, Yi-Hsin Chen, Wen-Hsiao Peng, and **Wei-Chen Chiu**, "Class-incremental Learning with Rectified Feature-Graph Preservation," in *Asian Conference on Computer Vision (ACCV), Virtual, November 30-December 10, 2020*.
 27. Yen-Chung Chen, Keng-Jui Chang, Yi-Hsuan Tsai, and **Wei-Chen Chiu**, "Boosting Image and Video Compression via Learning Latent Residual Patterns," in *British Machine Vision Conference (BMVC), Virtual, September 7-10, 2020*.
 28. Chung-Sheng Lai, Zunzhi You, Ching-Chun Huang, Yi-Hsuan Tsai, and **Wei-Chen Chiu**, "Colorization of Depth Map via Disentanglement," in *European Conference on Computer Vision (ECCV), Virtual, August 23-28, 2020*.
 29. Piotr Kotlinski, Xi-Jing Chang, Yang Chih-Yun, **Wei-Chen Chiu**, and Yung-Yu Chang, "Using Gamification to Create and Label Photos That Are Challenging for Computer Vision and People," in *ACM International Joint Conference on Pervasive and Ubiquitous Computing and ACM International Symposium on Wearable Computers (UbiComp-ISWC) Posters and Demos, Virtual, September 12-17, 2020*.
 30. Hsuan-Kai Kai, Cheng-Che Lee, and **Wei-Chen Chiu**, "Learning Low-Shot Generative Networks for Cross-Domain Data," in *International Conference on Pattern Recognition (ICPR), Milan, Italy, January 10-15, 2020*.
 31. Mian-Jhong Chiu, **Wei-Chen Chiu**, Hua-Tsung Chen, and Jen-Hui Chuang, "Real-time Monocular Depth Estimation with Extremely Light-Weight Neural Network," in *International Conference on Pattern Recognition (ICPR), Milan, Italy, January 10-15, 2020*.
 32. You-Feng Wu, Vu-Hoang Tran, Ting-Wei Chang, **Wei-Chen Chiu**, and Ching-Chun Huang, "DEN: Disentangling and Exchanging Network for Depth Completion," in *International Conference on Pattern Recognition (ICPR), Milan, Italy, January 10-15, 2020*.
 33. Chia-Chi Cheng, Hung-Yu Chen, and **Wei-Chen Chiu**, "Time Flies: Animating a Still Image with Time-Lapse Video as Reference," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), Seattle, WA, USA, June 14-19, 2020*.
 34. Fu-En Wang, Yu-Hsuan Yeh, Min Sun, **Wei-Chen Chiu**, and Yi-Hsuan Tsai, "BiFuse: Monocular

- 360 Depth Estimation via Bi-projection Fusion," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Seattle, WA, USA, June 14-19, 2020.
35. Yi-Lun Lee, Min-Yuan Tseng, Yu-Cheng Luo, Dung-Ru Yu, and **Wei-Chen Chiu**, "Learning Face Recognition Unsupervisedly by Disentanglement and Self-Augmentation," in *IEEE International Conference on Robotics and Automation (ICRA)*, Paris, France, May 31-June 4, 2020.
 36. Ning-Hsu Wang, Bolivar Solarte, Yi-Hsuan Tsai, **Wei-Chen Chiu**, and Min Sun, "360SD-Net: 360° Stereo Depth Estimation with Learnable Cost Volume," in *IEEE International Conference on Robotics and Automation (ICRA)*, Paris, France, May 31-June 4, 2020.
 37. Hung-Yu Chen, I-Sheng Fang, Chia-Ming Cheng, and **Wei-Chen Chiu**, "Self-Contained Stylization via Steganography for Reverse and Serial Style Transfer," in *IEEE Winter Conference on Applications of Computer Vision (WACV)*, Aspen, CO, USA, March 1-5, 2020.
 38. Tsun-Hsuan Wang, Hou-Ning Hu, Chieh Hubert Lin, Yi-Hsuan Tsai, **Wei-Chen Chiu**, and Min Sun, "3D LiDAR and Stereo Fusion using Stereo Matching Network with Conditional Cost Volume Normalization," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Macau, China, November 04-08, 2019.
 39. Yen-Chung Chen, Keng-Jui Chang, Yu-Chiang Frank Wang, Yi-Hsuan Tsai, and **Wei-Chen Chiu**, "Guide Your Eyes: Learning Image Manipulation under Saliency Guidance," in *30th British Machine Vision Conference (BMVC)*, Cardiff, UK, September 09-12, 2019.
 40. Hsueh-Ying Lai, Yi-Hsuan Tsai, and **Wei-Chen Chiu**, "Bridging Stereo Matching and Optical Flow via Spatiotemporal Correspondence," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Long Beach, CA, USA, June 16-20, 2019.
 41. Wei-Lun Chang, Hui-Po Wang, Wen-Hsiao Peng, and **Wei-Chen Chiu**, "All about Structure: Adapting Structural Information across Domains for Boosting Semantic Segmentation Abstract," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Long Beach, CA, USA, June 16-20, 2019.
 42. Yen-Chung Chen, Keng-Jui Chang, Yi-Hsuan Tsai, and **Wei-Chen Chiu**, "Learning Patterns of Latent Residual for Improving Video Compression," in *Workshop and Challenge on Learned Image Compression (CLIC) in conjunction with IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Long Beach, CA, USA, June 16-20, 2019.
 43. Yi-Lun Liao, Yao-Cheng Yang, Yuan-Fang Lin, Pin-Jung Chen, Chia-Wen Kuo, **Wei-Chen Chiu**, and Yu-Chiang Frank Wang, "Learning Pose-Aware 3D Reconstruction via 2D-3D Self-Consistency," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Brighton, UK, May 12-17, 2019.
 44. Tsun-Hsuan Wang, Fu-En Wang, Juan-Ting Lin, Yi-Hsuan Tsai, **Wei-Chen Chiu**, and Min Sun, "Plug-and-Play: Improve Depth Prediction via Sparse Data Propagation," in *IEEE International Conference on Robotics and Automation (ICRA)*, Montreal, Canada, May 20-24, 2019.
 45. Hsuan-I Ho, **Wei-Chen Chiu**, and Yu-Chiang Frank Wang, "Summarizing First-Person Videos from Third Persons' Points of View," in *European Conference on Computer Vision (ECCV)*, Munich, Germany, September 08-14, 2018.
 46. Yen-Cheng Liu, Yu-Ying Yeh, Tzu-Chien Fu, Sheng-De Wang, **Wei-Chen Chiu**, and Yu-Chiang Frank Wang, "Detach and Adapt: Learning Cross-Domain Disentangled Deep Representation," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Salt Lake City, Utah, USA, June 18-22, 2018.
 47. Tzu-Chien Fu, **Wei-Chen Chiu**, and Yu-Chiang Frank Wang, "Learning Guided Convolutional Neural

- Networks For Cross-Resolution Face Recognition," in *IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*, Roppongi, Tokyo, Japan, September 25-28, 2017.
48. Yen-Cheng Liu, **Wei-Chen Chiu**, Sheng-De Wang, and Yu-Chiang Frank Wang, "Domain-Adaptive Generative Adversarial Networks For Sketch-To-Photo Inversion," in *IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*, Roppongi, Tokyo, Japan, September 25-28, 2017.
 49. Yang He, **Wei-Chen Chiu**, Margret Keuper, and Mario Fritz, "RGBD Semantic Segmentation Using Spatio-Temporal Data-Driven Pooling," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Honolulu, Hawaii, USA, July 22-25, 2017.
 50. **Wei-Chen Chiu**, Fabio Galasso, and Mario Fritz, "Towards Segmenting Consumer Stereo Videos: Benchmark, Baselines and Ensembles," in *Asian Conference on Computer Vision (ACCV)*, Taipei, Taiwan, November 20-24, 2016.
 51. **Wei-Chen Chiu** and Mario Fritz, "See the Difference: Direct Pre-Image Reconstruction and Pose Estimation by Differentiating HOG," in *IEEE International Conference on Computer Vision (ICCV)*, Santiago, Chile, December 13-16, 2015.
 52. Julia Seiter, **Wei-Chen Chiu**, Mario Fritz, Oliver Amft, and Gerhard Troester, "Joint Segmentation and Activity Discovery using Semantic and Temporal Priors," in *IEEE International Conference on Pervasive Computing and Communications (PerCom)*, St Louis, Missouri, USA, March 23-27, 2015.
 53. **Wei-Chen Chiu**, Gregory S. Johnson, Daniel Mcculley, Oliver Grau, and Mario Fritz, "Object Disambiguation for Augmented Reality Applications," in *25th British Machine Vision Conference (BMVC)*, Nottingham, UK, Sept 01-05, 2014.
 54. **Wei-Chen Chiu** and Mario Fritz, "Multi-Class Video Co-Segmentation with a Generative Multi-Video Model," in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Portland, Oregon, USA, June 23-28, 2013.
 55. **Wei-Chen Chiu**, Ulf Blanke, and Mario Fritz, "I spy with my little eye: Learning Optimal Filters for Cross-Modal Stereo under Projected Patterns," in *1st IEEE Workshop on Consumer Depth Cameras for Computer Vision (CDC4CV) in conjunction with International Conference on Computer Vision (ICCV)*, Barcelona, Spain, Nov 12, 2011.
 56. **Wei-Chen Chiu**, Ulf Blanke, and Mario Fritz, "Improving the Kinect by Cross-Modal Stereo," in *22nd British Machine Vision Conference (BMVC)*, Dundee, UK, Aug 29-Sept 02, 2011.
 57. Ching-Chun Huang, **Wei-Chen Chiu**, Sheng-Jyh Wang, and Jen-Hui Chuang, "Probabilistic Modeling of Dynamic Traffic Flow across Non-overlapping Camera Views," in *IEEE International Conference on Pattern Recognition (ICPR)*, Istanbul, Turkey, August 23-26, 2010.
 58. Qi Wu, Ching-Chun Huang, Shih-Yu Wang, **Wei-Chen Chiu**, and Tsuhan Chen, "Robust Parking Space Detection Considering Inter-Space Correlation," in *IEEE International Conference on Multimedia and Expo (ICME)*, Beijing, China, July 2-5, 2007.