



邱維辰 Wei-Chen Chiu

Doctor of Engineering Science (Dr.-Ing.)
Max Planck Institute for Informatics





個人學經歷資料

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[🔗 Personal Webpage](#) 個人網頁(含研究資料與成果、學術著作全文)




Education

- 2011–2016 **Dr.-Ing. (Doctor of Engineering)**, *Max Planck Institute for Informatics*,
(PhD defense date: Saarbrücken, Germany.
13th Sept. 2016)
 Department: Computer Vision and Multimodal Computing ⚡
Research Group: Scalable Learning and Perception ⚡
Advisor: Dr. Mario Fritz ⚡
Thesis Topic: 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 ⚡
GPA Overall: 4.00/4.00, 26 credits
Advisor: Prof. Jen-Hui Chuang ⚡, Co-advisor: Prof. Sheng-Jyh Wang ⚡
Thesis Topic: 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 ⚡
GPA Overall: 3.54/4.00, 159 credits
- Fall 2006 **Exchange Student**, *Carnegie Mellon University*, Pittsburgh, USA.
 Electrical and Computer Engineering (ECE) ⚡
GPA Overall: 3.67/4.00, 36 units
Major Courses: Computer Graphics, Computational Photography and Junior Projects
Advisor: Prof. Tsuhan Chen ⚡
- 2001–2004 **High School Graduation**, *National Tainan First Senior High School*, Tainan
City, Taiwan.


Honor and Distinctions

- 2017–present cacaFly Junior Chair Professor
 (聖洋科技青年講座教授)
- 2017–present Frank S Chen Junior Chair Professor
 (交通大學校長青年講座教授)
- 2017–present MOST Special Outstanding Talent Award
 (科技部延攬特殊優秀人才獎勵)
- 25/08/2019 Best/Good Master Thesis Awards (won by my graduate students, Wei-Lung
Chang and Hsueh-Ying Lai)
 Chinese Image Processing and Pattern Recognition Society (IPPR)
- 23/12/2017 First Place (won by students co-supervised with Prof. Yu-Chiang Frank Wang:
Yen-Cheng Liu, Yuying Yeh, Hsuan-I Ho, and Tzu-Chien Fu)
 MOST Workshop on Generative Adversarial Networks and GAN Project Com-
petition
- 23/08/2009 Good Master Thesis Award
 Chinese Image Processing and Pattern Recognition Society (IPPR)

Academic and Working Experiences

- Apr.2019 – **Consultant**, *Viscovery Pte. Ltd.*, Taipei, Taiwan.
Sept.2019
 Topic: Computer vision and machine learning algorithm development
- Aug.2017 – **Assistant Professor**, *Department of Computer Science, National Chiao Tung University*, Hsinchu, Taiwan.
present
 My Research Group: Enriched Vision Applications Laboratory (Room 708, EC Building)
- Feb.2017 – **Postdoctoral Researcher**, *Multimedia and Machine Learning Lab, Research Center for Information Technology Innovation (CITI), Academia Sinica*, Taipei, Taiwan.
July.2017
 Laboratory Director: Dr. Yu-Chiang Frank Wang ⚡
- Aug.2016 – **Computer Vision Research Scientist**, *Viscovery Pte. Ltd.*, Taipei, Taiwan.
Jan.2017
 Topic: Developing deep learning algorithms for applications related to video content analysis, e.g. face/object/scene detection and recognition
- Summer 2015 **Teaching Assistant**, *Universität des Saarlandes*, Saarbrücken, Germany.
 Course: High Level Computer Vision ⚡
Lecturer: Prof. Bernt Schiele ⚡ and Dr. Mario Fritz ⚡
- Spring 2011 **Internship**, *Max Planck Institute for Informatics*, Saarbrücken, Germany.
 Department: Computer Vision and Multimodal Computing ⚡
Director: Prof. Bernt Schiele ⚡
Advisor: Dr. Mario Fritz ⚡
Collaborator: Dr. Ulf Blanke ⚡
Topic: Improving Kinect's depth by cross-modal stereo
- Winter 2010 **Engineer**, *Largan Precision Co. Ltd.*, Taichung, Taiwan.
 Department: Image Processing
Topic: Algorithm research & design for softwares of computational photography
- 2009–2010 **Corporal (Compulsory)**, *R.O.C Army*, Taiwan.
 Unit: 43 Artillery Command, 8th Army Corps
Position: Assistant field artillery leader of M114 155mm Howitzer
- Spring 2008 **Teaching Assistant**, *National Chiao Tung University*, Hsinchu, Taiwan.
 Seminar: Electrical Engineering and Computer Science Technology
Lecturer: Prof. Shie-Yuan Wang ⚡
- Fall 2007 **Internship**, *Industrial Technology Research Institute*, Hsinchu, Taiwan.
 Department: Computer Vision & Image Processing, Advanced Technology Center ⚡
Head: Dr. Ching-Chun Huang ⚡ (now assistant professor at National Chung Cheng University, Chiayi, Taiwan.)
Topic: Facial feature tracking and animation effect presentation

Academic Services

- Reviewer
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI, 2017-2020)
 - IEEE Transactions on Image Processing (TIP, 2016-2020)
 - IEEE Transactions on Circuits and Systems for Video Technology (TCSVT, 2019)
 - IEEE Transactions on Multimedia (TMM, 2017)
 - IEEE Transactions on Signal Processing (TSP, 2016-2017)
 - IEEE Signal Processing Letters (2016-2017)
 - IEICE Transactions on Information and Systems (2017-2018)
 - Journal of Information Science and Engineering (2016-2017)
 - Journal of Artificial Intelligence Research (2017)
 - ACM Computing Surveys (2017)
 - The Visual Computer (2017-2018)
 - IEEE Conference on Computer Vision and Pattern Recognition (CVPR, 2018-2020)
 - IEEE International Conference on Computer Vision (ICCV, 2019)
 - European Conference on Computer Vision (ECCV, 2018)
 - AAAI Conference on Artificial Intelligence (AAAI, 2019-2020)
 - Neural Information Processing Systems (NeurIPS, 2019)
 - IEEE International Conference on Machine Learning (ICML, 2020)
 - IEEE International Conference on Robotics and Automation (ICRA, 2020)
 - Asian Conference on Computer Vision (ACCV, 2016-2018)
 - British Machine Vision Conference (BMVC, 2019)
 - International Conference on Advanced Video and Signal-based Surveillance (AVSS, 2017-2019)
 - International Conference on Pattern Recognition (ICPR, 2016-2020)
 - International Conference on Acoustics, Speech and Signal Processing (ICASSP, 2018-2019)
 - International Conference on Image Processing (ICIP, 2018-2019)
 - International Conference on Visual Communications and Image Processing (VCIP, 2019)
 - International Conference on Intelligent Transportation Systems (ITS, 2018)
 - IEEE Symposium on Computers and Communications (ISCC, 2018)
 - International Symposium on Pervasive Systems, Algorithms, and Networks (I-SPAN, 2017)
- 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
 - Doctor Symposium Chairs, 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

Contributor Research Planning of Signal Processing Area, Communications Engineering Program, Ministry of Science and Technology, Taiwan, 2017
(電信學門研究發展規劃書-訊號處理領域)

Invited Talks and Short Courses (in Industry)

- Fall 2019 *Courses in Deep Generative Models and Metric Learning*, MediaTek Inc.
- Fall 2018 *Courses in Deep Generative Models and Metric Learning*, MediaTek Inc.
- Fall 2017 *Courses in Deep Generative Models and Metric Learning*, MediaTek Inc.
- April 2019 *Short Course in Domain Adaptation*, Industrial Technology Research Institute
- February 2018 *Short Course in Deep Generative Models*, Industrial Technology Research Institute
- December 2017 *Short Course in Deep Generative Models*, Industrial Technology Research Institute
- May 2017 *Short Course in Deep Generative Models*, Altek Corporation
- July 2019 *Reduce Consumption in Learning: from Data, Model, and Task*, AsusTek Computer Inc.
- October 2018 *Recent Advances on Deep Generative Models with Various Applications on Computer Vision*, MediaTek Inc.

Invited Talks (in Academia)

- June 2020 *From Low-Level Vision, Detailed Recognition, to Some Funs in Images*, Department of Computer Science and Information Engineering, National Central University, Taiwan
- January 2020 *Examples of Applying Unsupervised Learning in Computer Vision*, Taiwan AI Academy
- November 2019 *From Low-Level Vision, Detailed Recognition, to Some Funs in Images*, Institute of Industrial Science, University of Tokyo
- September 2019 *Learning Residual Patterns for Improving Video Compression*, Video and Image Compression in the AI Era Workshop, Taiwan
- June 2019 *Reduce Consumption in Learning: from Data, Model, and Task*, Institute of Statistical Science, Academia Sinica, Taiwan
- June 2019 *Domain Adaptation for Semantic Segmentation / Joint Learning of Stereo Matching and Optical Flow*, AI Meetup, Pervasive Artificial Intelligence Research Labs, Taiwan
- March 2019 *Reduce Consumption in Learning: from Data, Model, and Task*, Taiwan AI Academy
- December 2018 *Self-Contained Style Transfer and Saliency-Guided Image Manipulation*, ACLCLP Information Retrieval Workshop, Taiwan
- December 2018 *Reduce Consumption in Learning: from Data, Model, and Task*, Department of Statistics, National Cheng Kung University, Taiwan

- October 2018 *Recent Advances on Deep Generative Models with Various Applications on Computer Vision*, Taiwan AI Academy
- May 2018 *Saliency-Guidance Image Manipulation and Cross-Domain Disentanglement*, 6th TWSIAM Annual Meeting
- November 2017 *Introduction to Deep Generative Models and Recent Results on Cross-Domain Disentanglement*, Department of Computer Science and Information Engineering, National Taiwan University of Science and Technology, Taiwan
- November 2017 *Introduction to Deep Generative Models and Recent Results on Cross-Domain Disentanglement*, International Graduate Program, Academia Sinica, Taiwan
- November 2017 *Introduction to Deep Generative Models and Recent Results on Cross-Domain Disentanglement*, Institute of Communications Engineering, National Tsing Hua University, Taiwan
- October 2017 *Introduction to Deep Generative Models and Recent Results on Cross-Domain Disentanglement*, Department of Computer Science and Information Engineering, National Chung Cheng University, Taiwan
- May 2017 *Introduction to Deep Generative Models and Recent Results on Cross-Domain Disentanglement*, Department of Electrical Engineering, National Chung Cheng University, Taiwan

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

International Journal Papers

- 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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- **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.
- **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.
- Julia Seiter, **Wei-Chen Chiu**, Mario Fritz, Oliver Amft, and Gerhard Troester, "Joint Seg-

mentation 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.

- **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.
- **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.
- **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.
- **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.
- 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.
- 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.

Dissertation

- **Wei-Chen Chiu**, "Bayesian Non-Parametrics for Multi-Modal Segmentation," *Ph.D Dissertation*. ⚡
- **Wei-Chen Chiu**, "Probabilistic Modeling of Dynamic Traffic Flow between Non-Overlapping FOVs," *Master Thesis*. ⚡