葉梅珍 Mei-Chen Yeh

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RESEARCH INTERESTS

Pattern recognition, especially representation learning, and its application to computer vision, information retrieval and multimedia computing.

EDUCATION

University of California at Santa Barbara, CA, USA
Ph.D. in Electrical and Computer Engineering

National Tsing Hua University, Taiwan
M.S. in Computer Science

National Tsing Hua University, Taiwan
B.S. in Computer Science

APPOINTMENTS

Professor   2020-present
Dept. of CSIE, National Taiwan Normal University   Taipei, Taiwan

Associate Professor   2015-2020
Dept. of CSIE, National Taiwan Normal University   Taipei, Taiwan

Assistant Professor   2009-2015
Dept. of CSIE, National Taiwan Normal University   Taipei, Taiwan

Research Assistant   2004-2009
Learning-Based Multimedia Lab, UCSB   Santa Barbara, CA

R&D Intern   Summer 2006, 2008
Intel Corporation   Chandler, AZ

R&D Intern   Summer 2005
Intel Corporation   Santa Clara, CA

Software Engineer   2002-2004
LITE-ON IT Corporation   Taipei, Taiwan

TEACHING EXPERIENCE

Faculty at CSIE, NTNU   August 2009-present
Undergraduate and graduate computer science courses   Taipei, Taiwan
Average instructor rating (in 5 years), undergrad: 4.57 / 5.0, grad: 4.44 / 5.0

PUBLICATIONS

Journal articles:

J1. Cheng-Hao Tu, Huei-Fang Yang, Shih-Min Yang, **Mei-Chen Yeh** and Chu-Song Chen, "SemanticHash: Hash Coding via Semantics-guided Label Prototype Learning," *IEEE Transactions on Artificial Intelligence* (*TAI*), 2(1), 42-57, 2021.

J2. **Mei-Chen Yeh** and Yi-Nan Li, "Multilabel Deep Visual-Semantic Embedding," *IEEE Transactions on Pattern Analysis and Machine Intelligence* (*TPAMI*), 42(6), 1530-1536, 2020. (SCIE, Impact Factor 17.73, 1/134)

J3. Kai-Lung Hua, Trang-Thi Ho, Kevin-Al anto Jangtjik, Yu-Jen Chen and **Mei-Chen Yeh**, "Artist-based Painting Classification using Markov Random Fields with Convolution Neural Network," *Multimedia Tools and Applications* (*MTAP*), 79(17), 12635-12658, 2020. (SCIE, Impact Factor 2.101, 37/105)

J4. Chuan-Shen Hu, Yi-Tsung Hsieh, Hsiao-Wei Lin and **Mei-Chen Yeh**, "Virtual Portraitist: An Intelligent Tool for Taking Well-Posed Selfies," *ACM Transactions on Multimedia Computing, Communications, and Applications* (*TOMM*), 15(1), February 2019. (SCIE, Impact Factor 2.87, 21/107)

J5. **Mei-Chen Yeh**, Han-Kuen Chiu and Jia-Shung Wang, "Fast Medium-Scale Multiperson Identification in Aerial Videos," *Multimedia Tools and Applications* (*MTAP*), 75(23), 16117-16133, 2016. (SCIE, EI, Impact Factor 2.101, 37/105)

J6. **Mei-Chen Yeh**, "Selecting Interesting Image Regions to Automatically Create Cinemagraphs," *IEEE MultiMedia*, 23(1):72-81, 2016. (SCI, EI, Impact Factor 1.767, 17/105)

J7. **Mei-Chen Yeh**, Yen-Wei Tsai and Hao-Chen Hsu, "A Content-Based Approach for Detecting Highlights in Action Movies," *Multimedia Systems*, 22(3), 287-295, 2016. (SCI, EI, Impact Factor 0.619, 73/102)

J8. **Mei-Chen Yeh** and Wen-Po Wu, "Clustering Faces in Movies Using an Automatically Constructed Social Network," *IEEE MultiMedia*, 21(2):22-31, 2014. (SCI, EI, Impact Factor 1.767, 17/105)

J9. **Mei-Chen Yeh**, Chih-Fan Hsu and Chia-Ju Lu, "Fast Salient Object Detection through Efficient Subwindow Search," *Pattern Recognition Letters*, 46(1):60-66, 2014. (SCIE, EI, Impact Factor 1.551, 55/123)

J10. **Mei-Chen Yeh** and Kwang-Ting Cheng, "Fast Visual Retrieval Using Accelerated Sequence Matching," *IEEE Transactions on Multimedia*, 13(2):320-329, 2011. (SCIE, EI, Impact Factor 1.935, 7/104)

Peer-reviewed international conference papers:

C1. Chia-Fu Yeh and **Mei-Chen Yeh**, "A Semi-Supervised Approach for Traditional Chinese Scene Text Detection," *IEEE International Workshop on Multimedia Signal Processing* (*MMSP*), 2022.

C2. Kuan-Ying Chen and **Mei-Chen Yeh**, "Generative and Adaptive Multi-Label Generalized Zero-Shot Learning," *IEEE International Conference on Multimedia and Expo* (*ICME*), 2022.

C3. Fang Li and **Mei-Chen Yeh**, "Generalized Zero-Shot Recognition through Image-Guided Semantic Classification," *IEEE International Conference on Image Processing* (*ICIP*), 2021.

C4. Yan-He Chen and **Mei-Chen Yeh**, "Text-Enhanced Attribute-Based Attention for Generalized Zero-Shot Fine-Grained Image Classification," *ACM International Conference on Multimedia Retrieval* (*ICMR*), 2021.

C5. Shih-Min Yang and **Mei-Chen Yeh**, "Unsupervised Multi-Task Domain Adaptation," *International Conference on Pattern Recognition* (*ICPR*), 2020.

C6. Chuan-Shen Hu and **Mei-Chen Yeh**, "A Topological Data Analysis Approach to Video Summarization," *IEEE International Conference on Image Processing* (*ICIP*), 2019.

C7. Yi-Ning Chen and **Mei-Chen Yeh**, "Photo Filter Recommendation through Analyzing Objects, Scenes and Aesthetics," *IEEE International Conference on Multimedia Big Data (BigMM)*, 2019. **(best poster award)**

C8. Ming-Che Wu and **Mei-Chen Yeh**, "Early Detection of Vacant Parking Spaces Using Dashcam Videos," *AAAI Conference on Innovative Applications of Artificial Intelligence* (*IAAI*), 2019.

C9. Tsuo-Chen Wu and **Mei-Chen Yeh**, "The Impact of Feng Shui on House Price: A Data Perspective," *IEEE International Symposium on Multimedia* (*ISM*), 2017.

C10. Yi-Tsung Hsieh and **Mei-Chen Yeh**, "Head Pose Recommendation for Taking Good Selfies," *ACM Multimedia Workshop* (*MUSA2*), 2017.

C11. Wildsky Fann and **Mei-Chen Yeh**, "Granularity-Based Interactive Image Display," *IEEE International Conference on Image Processing* (*ICIP*), 2017. (technical demonstration paper)

C12. Kevin Alfianto Jangtjik, Trang-Thi Ho, **Mei-Chen Yeh** and Kai-Lung Hua, "A CNN-LSTM Framework for Authorship Classification of Paintings," *IEEE International Conference on Image Processing* (*ICIP*), 2017.

C13. Kai-Lung Hua, Irawati Nurmala Sari and **Mei-Chen Yeh**, "Human Pose Tracking using Online Latent Structured Support Vector Machine," *International Conference on MultiMedia Modeling* (*MMM*), 2017.

C14. Kevin Alfianto Jangtjik, **Mei-Chen Yeh** and Kai-Lung Hua, "Artist-based Classification via Deep Learning with Multi-scale Weighted Pooling," *ACM International Conference on Multimedia* (*MM*), 2016.

C15. Zi-Yi Ke and **Mei-Chen Yeh**, "A Computational Approach to Finding Facial Patterns of a Babyface," *ACM International Conference on Multimedia Retrieval* (*ICMR*), 2016.

C16. **Mei-Chen Yeh** and Shao-Ting Yang, "A Multimodality Approach to Predicting the Popularity of Sneakers," *IEEE ICCE-Taiwan*, 2015.

C17. **Mei-Chen Yeh** and Hsiao-Wei Lin, "Virtual Portraitist: Aesthetic Evaluation of Selfies Based on Angle," *ACM International Conference on Multimedia* (*MM*), Orlando, Florida, USA, November 2014. (grand challenge paper)

C18. **Mei-Chen Yeh** and Hsiao-Wei Lin, "Taking Good Selfies on Your Phone," *ACM International Conference on Multimedia* (*MM*), Orlando, Florida, USA, November 2014. (technical demonstration paper)

C19. **Mei-Chen Yeh** and Chun-Hui Chuang, "Assessing the Aesthetic Quality of Photographs through Group Comparison," *IEEE ICCE-Taiwan*, 2014.

C20. Chia-Ju Lu, Chih-Fan Hsu and **Mei-Chen Yeh**, "Real-time Salient Object Detection," *ACM International Conference on Multimedia* (*MM*), Barcelona, Spain, October 2013. (technical demonstration paper)

C21. **Mei-Chen Yeh** and Bo-Yi Li, "An Approach to Automatic Construction of Cinemagraphs," *ACM International Conference on Multimedia* (*MM*), Nara, Japan, October 2012.

C22. Yin-Tzu Chan, Hao-Chen Hsu, Po-Yi Li and **Mei-Chen Yeh**, "Automatic Cinemagraphs for Ranking Beautiful Scenes", *ACM International Conference on Multimedia* (*MM*), Nara, Japan, October 2012. (grand challenge paper)

C23. **Mei-Chen Yeh** and Po-Yi Li, "A Tool for Automatic Cinemagraphs", *ACM International Conference on Multimedia* (*MM*), Nara, Japan, October 2012. (technical demonstration paper)

C24. **Mei-Chen Yeh** and Yu-Chen Cheng, "Relative Features for Photo Quality Assessment," *IEEE International Conference on Image Processing* (*ICIP*), Orlando, Florida, October 2012.

C25. **Mei-Chen Yeh**, Ming-Chi Tseng and Wen-Po Wu, "Automatic Social Network Construction from Movies Using Film-Editing Cues," *IEEE International Conference on Multimedia and Expo Workshops* (*ICMEW*), Melbourne, Australia, July 2012.

C26. **Mei-Chen Yeh** and Jason Tai, "A Hierarchical Approach to Practical Beverage Package Recognition," *Pacific-Rim Symposium on Image and Video Technology*, 2011. (*Lecture Notes in Computer Science*, vol. 7088, pp. 348-357, 2011)

C27. **Mei-Chen Yeh**, Chao-Yung Hsu and Chun-Shien Lu, "NTNU-Academia Sinica at TRECVID 2010 Content Based Copy Detection," *TRECVID Video Retrieval Evaluation Workshop*, 2010.

C28. **Mei-Chen Yeh** and Kwang-Ting Cheng, "A Compact, Effective Descriptor for Video Copy Detection," *ACM International Conference on Multimedia* (*MM*), Beijing, China, October 2009.

C29. **Mei-Chen Yeh** and Kwang-Ting Cheng, "Video Copy Detection by Fast Sequence Matching," *ACM International Conference on Image and Video Retrieval* (*CIVR*), Santorini Island, Greece, 2009.

C30. **Mei-Chen Yeh**, Sheng Zhang and Kwang-Ting Cheng, "An Experimental Study on Content-Based Face Annotation of Photos," *IEEE International Conference Biometrics: Theory, Applications and Systems* (*BTAS*), Washington DC, 2009.

C31. Sheng Zhang, Terence Sim and **Mei-Chen Yeh**, "Revisiting the Fisher Linear Discriminant," *IEEE International Conference on Computer Vision Workshops* (*ICCVW)*, Kyoto, Japan, September 2009.

C32. **Mei-Chen Yeh** and Kwang-Ting Cheng, "A String Matching Approach for Visual Retrieval and Classification," *ACM International Conference on Multimedia Information Retrieval* (*MIR*), Vancouver, Canada, October 2008.

C33. Shih-Wei Chu, **Mei-Chen Yeh** and Kwang-Ting Cheng, "A Real-time, Embedded Face-Annotation System," *ACM international conference on Multimedia* (*MM*), Vancouver, Canada, October 2008. (technical demonstration paper)

C34. Qiang Zhu, **Mei-Chen Yeh** and Kwang-Ting Cheng, "Multimodal Fusion Using Learned Text Concepts for Image Categorization," *ACM international conference on Multimedia* (*MM*), Santa Barbara, CA, October 2006. (full paper)

C35. Qiang Zhu, **Mei-Chen Yeh**, Shai Avidan and Kwang-Ting Cheng, "Fast Human Detection using Variable Histograms of Oriented Gradients," *IEEE Conference on Computer Vision and Pattern Recognition* (*CVPR*), New York City, NY, June 2006.

C36. **Mei-Chen Yeh,** I-Hsiang Lee, Gang Wu, Yi Wu and Edward Y. Chang, "Manifold Learning, a Promised Land or Work in Progress?" *IEEE International Conference on Multimedia & Expo* (*ICME*), Amsterdam, Netherlands, July 2005.

C37. **Mei-Chen Yeh**, Yen-Lin Huang and Jia-Shung Wang, "Scalable Ideal-Segmented Chain Coding," *IEEE International Conference on Image Processing* (*ICIP*), Rochester, NY, September 2002.

[Peer-reviewed domestic conference papers available upon request]

PATENTS

1. Yi-Jen Chiu, **Mei-Chen Yeh**, Prasenjit Biswas and Louis Lippincott, "Chroma Motion Vector Processing Apparatus, System, and Method," US Patent 8379723, 2013.

2. Yi-Jen Chiu and **Mei-Chen Yeh**, "Image Buffering Techniques," US Patent 7656410, 2010.

3. Yi-Jen Chiu and **Mei-Chen Yeh**, "Optimizing the Storage and Reducing the Computation of Reference Picture List Processing in Video Decoding," US Patent App. 11/555,522, 2006.

4. Chih-Chiang Shen and **Mei-Chen Yeh**, "Method of Buffer Management in Video Encoder," US Patent App. 10/912238, 2005. Taiwan Patent, 2005.

GRANTS

MOST 111-2221-E-003-016-MY2. A Study on Generalized Zero-Shot Visual Recognition, 2022/08/01-2024/07/31. Amount of Award: $ 1,740,000

MOST 110-2221-E-003-016. Transfer Learning Based Visual Recognition Models, 2021/08/01-2022/07/31. Amount of Award: $ 798,000

MOST 108-2221-E-003-017-MY2. Deep Cross-Modal Embedding Models for Multilabel Classification, 2019/08/01-2021/07/31. Amount of Award: $2,056,000

Qualcomm NAT-414697. Zero-Shot Learning for Multilabel Classification and Reinforcement Learning on Improving Gaming Programs (with co-PI Shun-Shii Lin), 2019/06/01-2019/12/31. Amount of Award: $3,000,000

MOST 106-2221-E-003-031-MY2. Analysis of High Dimensional Data: Computational Topology and Its Application in Video Summarization, 2017/08/01-2019/07/31. Amount of Award: $1,486,000

MOST 105-2221-E-003-023. Computational Methods for Understanding Social Face Perception: Babyface as Example, 2016/08/01-2017/07/31. Amount of Award: $689,000

MOST 104-2221-E-003-020. Aesthetic Quality Analysis of Self-Portrait Photographs Based on Angle, 2015/08/01-2016/07/31. Amount of Award: $610,000

MOST 103-2221-E-003-015. A Study on Automated Cinemagraph, 2014/08/01-2015/07/31. Amount of Award: $688,000

MOST 103-2911-I-001-509. 台灣法國雙邊多媒體內容分析與應用研討會, co-PI, with PI Wen-Huang Cheng, 2014/9/2- 2014/9/6. Amount of Award: $810,000

MOST 103-2911-I-194-502. 台灣奧地利雙邊大規模跨媒體事件探勘研討會, co-PI, with PI Wen-Huang Cheng, 2014/2/17-2014/2/21. Amount of Award: $197,740

NSC 102-2221-E-003-026. Aesthetic Quality Analysis of Images and Videos, 2013/08/01-2014/07/31. Amount of Award: $567,000

NSC 102-2911-I-001-501. 台灣奧地利雙邊智慧型多媒體技術研討會, 2013/6/3- 2013/6/7. Amount of Award: $246,000

NSC 101-2221-E-003-023. A Fusion Framework for Face Clustering and Social Network Construction from Movies, 2012/08/01-2013/07/31. Amount of Award: $518,000

NTNU 100A06. A Mobile Product Recognition System, 2012/01/01-2012/12/31. Amount of Award: $240,000

NSC 99-2221-E-003-027. A Study on Real-World Face Recognition Techniques, 2010/08/01-2011/07/31. Amount of Award: $406,000

NSC 100-2015-S-003-003. Scientific Exploration of Multimedia Technology (2/2), co-PI, with PI Greg Lee, 2011/05/01-2012/04/30. Amount of Award: $386,000

NSC 99-2515-S-003-004. Scientific Exploration of Multimedia Technology (1/2), co-PI, with PI Greg Lee, 2010/05/01-2011/04/30. Amount of Award: $745,000

NSC 99-2218-E-003-001. A Study on Advanced Methods for Video Copy Detection, 2010/02/01-2010/10/31. Amount of Award: $402,000

NTNU 98091039. A Study on Machine Tagging Techniques for Personal Photos, 2009/10/01-2010/07/31. Amount of Award: $80,000

PROFESSIONAL SERVICE ACTIVITIES

Recent Referee Assignments

Session Chairs: IEEE ICME (2022), IEEE ICIP (2019)

Program Committee Memberships: AAAI (2022, 2020, 2021) IEEE BigMM 2019, ACM MM (2021, 2020, 2019, 2018), IEEE ISM (2018, 2017), ACM ICMR (2021, 2018)

Journal Reviewing: IEEE Transactions on Image Processing, IEEE Transactions on Multimedia, Pattern Recognition, IEEE Multimedia, Multimedia Tools and Applications, Machine Vision and Applications, IEEE Access

Conference and Other Reviewing: ICLR 2022, AAAI 2022, AAAI 2021, AAAI 2020, CVPR 2022, CVPR 2021, CVPR 2020, CVPR 2019, CVPR 2018, ICCV 2021, ICCV 2019, ECCV 2021, ECCV 2020, ECCV 2018, BMVC 2019, ACCV 2018, WACV 2022, WACV 2021, MM 2020, MM 2019, MM 2017, ICME 2021, ICME 2020, ICME 2019, BigMM 2019, ISM 2018, SIGGRAPH 2017, Grant Proposal Review for MOST (2018-present)

Invited Presentations at Universities and Workshops

"**Deep Visual Semantic Embedding for Multilabel Classification**," Academia Sinica (August 21, 2019), NTHU ISA (April 8, 2020), NCCU CS (April 15, 2021), TIGP (April 25, 2022).

"**Image Tagging: Then and Now**," NCCU CS (April 9, 2018), NTUST CSIE (June 4, 2018), TWSIAM 2019 (May 25, 2019).

"**Image Recognition: Overview and Common Practices**," NTNU Life Science (October 12, 2018).

"**Determining Interestingness in Multimedia Data**," NCCU CS (March 12, 2015), KUAS CSIE (April 7, 2015), NTUST CSIE (May 25, 2015), NTHU CS (March 16, 2016).

"**Aesthetic Quality Analysis of Images and Videos**," NTHU ISA (Jan. 2, 2013), NTHU CS (March 27, 2013), 2013 Workshop for Multimedia + Mobile + User (July 5, 2013), NTUST CSIE (September 16, 2013), NCCU CS (March 29, 2014), 2014 France - Taiwan Multimedia Workshop (September 2-3, 2014).

"**Video Copy Detection by Fast Sequence Matching**," NTU CS (March 11, 2011), Academia Sinica (April 29, 2011), NTUST CSIE (May 16, 2011).

TEACHING AND SUPERVISION

Courses

- **CSU0018** Introduction to Algorithms, NTNU, undergraduate course
- **CSU0035** Numerical Methods, NTNU, undergraduate course
- **CSC0030** Pattern Recognition, NTNU, graduate course
- **CSC0032** Neural Networks, NTNU, graduate course
- **CSC0043** Multimedia System Design, NTNU, graduate course
- **CSC0002** Data Compression, NTNU, graduate course
- Machine Learning, 資訊科技科第二專長學分班

Supervision of MOST Undergraduate Projects

- Jui-Yu Wang, A Study on Text Recognition in Traditional Chinese Scenes (111-2813-C-003-032-E), 2022.
- Hsin-Yu Chang, Mask Removal and Face Restoration Using Deep Learning (111-2813-C-003-029-E), 2022.
- Yu-Jung Yeh, An End-to-end Framework for Traditional Chinese Scene Text Recognition (111-2813-C-003-034-E), 2022.

- Tzu-Hao Hsu, Transfer Learning in Medical Image Recognition (110-2813-C-003-036-E), 2021.
- Hsun-Tai Chan, Generating Cross-language Font Collection from Few Samples (110-2813-C-003-034-E), 2021.

- Ying-Ying Chang, A Study on Deep Domain Adaptation Hashing (109-2813-C-003-014-E), 2020.

- Hung-Chin Tsai, Consumer-to-shop clothes retrieval (108-2813-C-003-004-E), 2019.

- Yu-Ting Liu, Video captioning based on deep learning and visual recognition (107-2813-C-003-059-E), awarded **MOST College Student Research Creativity Award**, 2018.

- Zi-Yi Ke, Do you have a babyface? Finding components of a babyface using computational approaches (104-2815-C-003-043-E), awarded **MOST College Student Research Creativity Award**, 2015.

- Pei-Husan Chen, An editing tool for time-lapse videos (102-2815-C-003-046-E), 2013.

- Ai-Ling Tung, Hightlight detection in movies (102-2815-C-003-047-E), 2013.

- Tsai-Ling Feng, Automatic cinemagraph on smartphones (101-2815-C-003-046-E), won the 2nd prize of "NTNU BEST APP", 2012.

- Han-Yi Tsai, A rating system for amateur photographs (100-2815-C-003-017-E), awarded **NSC College Student Research Creativity Award**, 2011.

Supervision of NTNU-CSIE MS Students

- Present: Yo-Hong Guo, Cheng-Yu Ho, Yong-Hong Lin, Hsun-Cheng Feng, Yi-Hua Chao, Pin-Hsiang Tsai, Jing-Yong Wang, Chun-Yen Chen, Yi-Yun Han, Teng-Kuan Huang, Yi-Ru Lin, Yu-Wen Tung
- Class of 2022: Yan-He Chen, Zhen-Tang Huang, Chia-Fu Yeh
- Class of 2021: Kuan-Ying Chen, Shun-Ta Wang, Yu-Ting Lai, Bo-Heng Li
- Class of 2019: Shih-Min Yang, Fang Li
- Class of 2018: Yi-Ning Chen, Ming-Che Wu
- Class of 2017: Yi-Nan Li, Chun-Ju Lin, Shu-Yao Chang
- Class of 2016: Yi-Tsung Hsieh, Tsuo-Chen Wu
- Class of 2014: Yen-Wei Tsai, Yin-Ting Tsai, Hsiao-Wei Lin, Shao-Ting Yang
- Class of 2013: Chun-Hui Chuang, Yin-Tzu Chan, Hao-Chen Hsu
- Class of 2012: Po-Yi Li, Wen-Po Wu
- Class of 2011: Chih-Chieh Tai, Yu-Chen Cheng, Ming-Chi Tseng

SOCIETY MEMBERSHIPS

Institute of Electrical and Electronics Engineers (IEEE)

Association for Computing Machinery (ACM)