Professor Hsueh-Ming Hang (杭學鳴)

Education:

- Ph.D. Electrical Engineering, Rensselaer Polytechnic Institute (RPI), Troy, New York, 1984
- M.S. and B.S. Electronics/Control Engineering, National Chiao Tung University, 1980, 1978

Working Experiences:

- Dec. 1991 – July 2021, National Chiao-Tung University (NCTU), Hsinchu, Taiwan [Retired in Aug. '21]
  Associate and Full/Distinguished **Professor**, Department of Electronics Engineering
  Dean, Faculty of System Engineering, 2018-2019
  Dean, College of Electrical and Computer Engineering, 2014-2017
  Associate Dean, College of Electrical and Computer Engineering, 2005-06, 2010-2014
  Director, Center for Telecommunications Research, 1998-2004
- Aug. 2006 - July. 2009, National Taipei University of Technology (NTUT), Taiwan
  Chair Professor, Department of Computer Sci. and Information Technology
  Dean, College of Electrical Engineering and Computer Science
- Oct. 2011, Visiting Professor, Dept of Information Electronics, Nagoya University, Japan.
- Sep. 2004 - Nov. 2004, Visiting Research Professor, Univ. of Illinois at Urbana-Champaign, USA
- Jul. 1999 - Sept. 1999, Visiting Researcher, Microsoft Corporation, Washington, USA
- Jun. 1984 - Dec. 1991, **Member of Technical Staff**, AT&T Bell Laboratories, New Jersey, USA

Honor and Awards:

- Fellow of IEEE (2002), IET (2008) and Taiwan Consumer Electronics Society (2020)
- IEEE Third Millennium Medal, 2000
- Distinguished Professor, NCTU (2010-2012)
- Chair Professor, NTUT (2006-2009)
- International Collaborative Partner of University Tunku Abdul Rahman (UTAR, Malaysia) Global Research Network, 2013-
- Distinguished Engineering Professor Award, Chinese Institute of Electrical Engineering, 2012
- Distinguished Engineering Professor Award, Chinese Institute of Engineers, 2005
- AT&T Bell Labs Individual Performance Award, 1987, 1989, and 1991

Professional Society Services:

- Member, Nominations & Appointments Committee, IEEE Signal Processing Society, 2021-2022.
- Distinguished Lecturer, IEEE Circuits and Systems Society (2014-15).
- Member of Board of Governors (2013-18) and Distinguished Lecturer (2012-13), The Asia-Pacific Signal and Information Processing Association (APSIPA).
- Associate Editor, IEEE Transactions on Image Processing (1992-1994, 2008-2012)
- Associate Editor, IEEE Transactions on Circuits and Systems for Video Technology (1997-1999)
- Area Editor, Journal of Visual Communication and Image Representation (1996-1998)
- Guest editor, Special Issue on Advanced Video Technologies and Applications for H.264/AVC and Beyond, EURASIP Journal on Applied Signal Processing, 2006
- Guest editor, Special Issue on Multimedia Communication Services, Journal of Circuits, Systems and Signal Processing, Feb. 2001.
- Conference general co-chair, IEEE Conf. on Image Processing, Taipei, Taiwan (2019)
- Technical program coordinator, APSIPA ASC, Hawaii (2018)
- Conference general co-chair, IEEE Conf. on Visual Communications and Image Processing (2011)
- Technical program co-chair, IEEE Workshop on Signal Processing Systems (1999)
- Technical program co-chair (organizer), IEEE Int'l Symposium on Consumer Electronics (1998)
- Technical program chair, SPIE Conf. on Visual Communications and Image Processing (1995)
- Chapter chair, IEEE Consumer Electronics Society Taipei Chapter (1999-2000)
- Chapter chair, IEEE Signal Processing Society Taipei Chapter (1998-1999)

Research Highlights:

- Actively participate in the international multimedia MPEG/ITU standard activities since 1988-2015.
- Published over 200 technical papers, and hold 16 patents. Google citation: 4735; H-index:27 (2021.4.21)
- Supervised 16 Ph.D. students and 115 MS students completed their degrees.

Invited Talks:

- *Plenary Speech*: "Information Fusion in Some Image Machine Learning Applications," *24th International Conference on Systems, Signals and Image Processing* (IWSSIP), May 22-24, 2017, Poznań, Poland.
- *Plenary Speech*: "3D Video: Some Challenging Topics," *International Conference on Intelligent and Advanced System* (ICIAS) 2016, Kuala Lumpur, Malaysia, August 15-17, 2016.
- *Invited Talk*: "Globalization of Engineering Education: Our Experiences," Tokyo University of Agriculture and Technology, Japan. February 26, 2016.
- *Keynote Speech*: "3D Video: Some Challenging Topics," *IEEE International Circuits and Systems Symposium*, Langkawi, Malaysia, Sept. 3-4, 2015.
- *Keynote Speech*: "30 Years of Video Compression," *IEEE Conference on Visual Communications and Image Processing*, Kuching, Malaysia, Nov. 17-20, 2013.
- *Invited Talk*: "Multimedia Industry and R&D in Taiwan," Nagoya University, Japan. March 9, 2012.
- *Invited Talk:* "What's Next on Video Coding Techniques and Standards", *The 19th Annual Wireless and Optical Communications Conference* (WOCC 2010) May 14-15, 2010. Shanghai, China.
- *Invited Talk*: "Algorithm and DSP implementation of H.264/AVC", *Asia and South Pacific Design Automation Conference* 2006, Yokohama, Japan, Jan 24-27, 2006.
- *Invited Talk*: "Advances of MPEG Scalable Video Coding Standard", *International Workshop on Intelligent Information Hiding and Multimedia Signal Processing*, Melbourne, Australia, 14 – 16, Sept 2005.
- *Invited Talk*: "From Pels to Bits: Trend of Video Coding", *2005 Conf. on Computer Vision, Graphics, and Image Processing*, Taipei, Taiwan, Aug. 2005.

Selected Publications:

1. H.-M. Hang and J.W. Woods, "Predictive vector quantization of images," *IEEE Trans. on Communications*, Vol. COM-33, pp.1208--1219, Nov. 1985.
2. H.-M. Hang and B.G. Haskell, "Interpolative vector quantization of color images," *IEEE Trans. on Communications*, Vol. COM-36, pp.465--470, April 1988.
3. H.-M. Hang and J.-J. Chen, "Source model for transform video coder and its application, Part I: Fundamental theory," *IEEE Trans. Circuits and Systems for Video Technology*, Vol.7, No.2, pp.287--298, April, 1997.
4. C.-W. Tang and H.-M. Hang, "A feature based robust digital image watermarking scheme," *IEEE Transactions on Signal Processing*, Vol.51, No.4, pp.950-959, April 2003.
5. C.-H. Yang and H.-M. Hang, "Cascaded trellis-based rate-distortion control algorithm for MPEG-4 Advanced Audio Coding," *IEEE Transactions on Speech and Audio Processing*, Vol.14, No.3, pp.998-1007, May 2006.
6. J-J. Tsai and H.-M. Hang, "Modeling of pattern-based block motion estimation and its application," *IEEE Trans. Circuits and Systems for Video Technology*, Vol. 19, No.1. pp.108-113, Jan. 2009.
7. K.-L. Huang and H.-M. Hang, "Consistent picture quality control strategy for dependent video coding," *IEEE Trans. on Image Processing*, Vol.18, No. 5, pp.1004-1014, May 2009.
8. H.-C. Lin, H.-M. Hang, and W.-H. Peng, "Fast Bi-directional Prediction Selection in H.264/MPEG-4 AVC Temporal Scalable Video Coding," *IEEE Trans. on Image Processing*, Vol.20, No.12, pp.3508-3523, Dec. 2011.
9. C.-Y. Ma and H.-M. Hang, "Learning Based Saliency Model with Depth Information," Journal of Vision, No.6, Vol. 15, pp.1.-22, May 2015.
10. P. S. Santoso and H.-M. Hang, "Learning-based Human Detection Applied to RGB-D Images," *IEEE International Conf. on Image Processing*, Beijing, China, Sept 17-20, 2017.
11. S.-Y. Lo, H.-M. Hang, S.-W. Chan, and J.-J. Lin, "Efficient Dense Modules of Asymmetric Convolution for Real-Time Semantic Segmentation," 2019 ACM Multimedia Asia, Beijing, China, Dec. 16-18, 2019
12. P.-R. Chen, H.-M. Hang, S.-W. Chan, and J.-J. Lin, "DSNet: An Efficient CNN for Road Scene Segmentation", *APSIPA Transactions on Signal and Information Processing*, Vol. 9, e27, pp. 1-14, Nov. 2020.
13. S. Singh and H.-M. Hang, "A Continuous Learning System for Face Clustering and Recognition," 2021 *IEEE International Conference on Consumer Electronics* (ICCE) (Virtual), Jan. 10-12, 2021. (Best Paper Award)