

CV of Man-Wai MAK

Man-wai MAK, BEng(Hons), PhD, MIET, SrMIEEE
Assistant Professor (1995–2010)
Associate Professor (2010–June 2020)
Professor (July 2020–present)
Interim Head (Aug 2021–present)

Highlight

- Over 200 publications
- Associate Editor of IEEE Transactions on Audio, Speech and Language Processing (2011–2014), Journal of Signal Processing Systems, and IEEE Biometrics Compendium
- Three Research Grant Achievement Awards
- Faculty Awards for Outstanding Performance (Research and Scholarly Activities)
- 12 competitive research grants from RGC of Hong Kong
- Area Chair of Interspeech'2014, ICTAI'2016, Programme Co-Chair of ISCSLP'2018
- Co-PI of RGC Theme-based Project (2020–2024)
- Over HK\$3 million industrial grants since 2019.

Brief Technical Profile:

Dr. Man-Wai MAK joined Department of Electronic and Information Engineering at The Hong Kong Polytechnic University in 1993, and presently he is a professor and Interim Head. He has authored over 200 technical articles in speaker recognition, machine learning, and bioinformatics, and served as associate editors and guest editors of international journals. Dr. Mak co-authored the textbook “*Biometric Authentication: A Machine Learning Approach*, Prentice Hall, 2005” and “*Machine Learning for Speaker Recognition*, Cambridge University Press, 2020. He has served as Associate Editor of IEEE Trans. on Audio, Speech and Language Processing. Since 2019, Dr. Mak has received over HK\$3 million industrial grants from Tencent AI Lab and Huawei Technology Corporation. He is a Co-PI of an RGC Theme-based project with total funding of 45 million HKD.

Previous Relevant Research Work:

In the last ten years, Dr. Mak has been working extensively on robust speaker verification and deep learning. Recently, the PI has proposed MMD autoencoders, variational domain adversarial learning, and adaptation of speaker embedding networks for domain-invariant speaker verification. His SNR-dependent mixture of PLDA model and SNR-invariant PLDA perform significantly better than the conventional PLDA. More recently, Dr. Mak pioneered the technique of contrastive adversarial domain adaptation for speaker recognition and DNN-based feature selection for Alzheimer’s disease recognition.

Five Relevant Publications in Recent 3 Years:

1. L.X. Li, **M.W. Mak**, and J.T. Chien, "Contrastive Adversarial Domain Adaptation Networks for Speaker Recognition", *IEEE Transactions on Neural Networks and Learning Systems*, 2021. (10 pages)
2. W.W. Lin, **M.W. Mak**, N. Li, D. Su, and D. Yu, "A Framework for Adapting DNN Speaker Embedding Across Languages", *IEEE/ACM Transactions on Audio, Speech and Language Processing*, vol. 28, pp. 2810-2822, 2020.
3. Y.Z. Tu, **M.W. Mak** and J.T. Chien, "Variational Domain Adversarial Learning with Mutual Information Maximization for Speaker Verification", *IEEE/ACM Transactions on Audio, Speech and Language Processing*, vol. 28, pp. 2013-2024, June 2020.
4. W.W. Lin, **M.W. Mak** and J.T. Chien, "Multi-source I-vectors Domain Adaptation using Maximum Mean Discrepancy Based Autoencoders", *IEEE/ACM Transactions on Audio, Speech and Language Processing*, 26, 2412-2422, Dec. 2018.

5. Z. L. Tan, **M.W. Mak**, and B. Mak, "DNN-Based Score Calibration with Multitask Learning for Noise Robust Speaker Verification", *IEEE/ACM Transactions on Audio, Speech and Language Processing*, 26, 700-712, April 2018.

Five Relevant Publications Across Years:

6. Z. L. Tan, **M.W. Mak**, B. Mak and Y.K. Zhu, "Denoised Senone I-Vectors for Robust Speaker Verification", *IEEE/ACM Transactions on Audio, Speech and Language Processing*, vol. 26, no. 4, pp. 820-830, April 2018.
7. N. Li, **M.W. Mak**, and J.T. Chien, "DNN-driven Mixture of PLDA for Robust Speaker Verification", *IEEE/ACM Transactions on Audio, Speech and Language Processing*, 25, 1371-1383, June 2017.
8. **M.W. Mak**, X.M. Pang, and J.T. Chien, "Mixture of PLDA for Noise Robust I-Vector Speaker Verification", *IEEE/ACM Trans. on Audio Speech and Language Processing*, 24, 130-142, 2016.
9. N. Li and **M.W. Mak**, "SNR-Invariant PLDA Modeling in Nonparametric Subspace for Robust Speaker Verification", *IEEE/ACM Trans. on Audio Speech and Language Processing*, 23, 1648-1659, Oct. 2015.
10. W. Rao and **M.W. Mak**, "Boosting the Performance of I-Vector Based Speaker Verification via Utterance Partitioning", *IEEE Trans. on Audio, Speech and Language Processing*, 21, 1012-1022, May 2013.

Editorials:

Associate Editor:

- IEEE Trans. on Audio, Speech and Language Processing
- IEEE Biometrics Compendium
- Journal of Signal Processing Systems for Signal, Image, and Video Technology

Guest Editor:

- Journal of VLSI Signal Processing, 2008
- International Journal of Computational Intelligence Research, 2007
- Journal of Signal Processing Systems, 2016
- International Journal of Machine Learning and Cybernetics, 2016

Awards:

- Faculty of Engineering Research Grant Achievement Awards, 2003, 2009 and 2016
- Faculty Awards for Outstanding Performance (Research and Scholarly Activities), 2017

Others:

- Google scholar citations (as of Sept 2021): 3338, h-index 30, i10-index 103
- Admission Panel of the Technology Business Incubation, HKSTP, 2019 – 2021
- Assessment Panel, ITF - ESS, 2021 - 2022.
- Successful supervision of 7 Ph.D. and 7 MPhil students
- 23 invited talks
- Area Co-Chair of Interspeech 2014, ICTAI2016, PCM07
- Programme Co-Chair of ISCSLP'2018 and ISCSLP'2021; Technical Programme Committee member of AAAI'2021, Odyssey'2020, ASRU'2019, Interspeech'2019 and many other international conferences