Dr. Hung King Fai Kevin
B.Sc. (Hons) Queen's University, M.Phil. CUHK, Ph.D. CUHK
MIET, SMIEEE, MCIE

Associate Professor
Head of Department of Electronic Engineering & Computer Science
School of Science & Technology

Vice Chair, IEEE Hong Kong Section
Past Chair, Electronics & Communications Section (ECS), IET Hong Kong
Past Chair, IEEE EMBS Hong Kong – Macau Joint Chapter
Honorary Treasurer, Chinese Institute of Electronics (CIE) Hong Kong

Education:

- Doctor of Philosophy, The Chinese University of Hong Kong
- Master of Philosophy, The Chinese University of Hong Kong
- Bachelor of Science, Queen's University, Canada

Grants

Date of Grant	Type	Project Name	Funding Institution	Amount of Grant (HK$)	Role
19 Feb 2025	SZSF	Investigation of Quantum Machine Learning Frameworks for Biosignal-based Cardiovascular Disease Classification	HKMU	RMB 1,000,000	PI
14 Nov 2024	QEM	Service Learning x Design Thinking: Empower Empathy Through Technology	HKMU	582,052.80	Team Member
12 Nov 2024	R&D Fund	Development of High-Efficiency Artificial Synaptic Devices for Wearable Neuromorphic Sensing Applications	HKMU	200,000	Co-I
8 Nov 2024	PFDS	Preliminary Investigation of Using Quantum Machine Learning for ECG Classification	HKMU	150,000	PI
8 Nov 2024	PFDS	Development of an Effective Regularization Method for Overfitting and Bias Avoidance in the Cardiovascular Disease Prediction Model	HKMU	150,000	Co-I
8 Nov 2024	PFDS	Pilot Study for Risk Model Development in Chronic Obstructive Pulmonary Disease	HKMU	150,000	Co-I
10 Sep 2024	IDS(C)	Dynamic Stability Monitoring & Control of Construction Tower Cranes Using Digital Triple AI and IoT	RGC	2,945,543	Co-PI
23 Jul 2024	Team-Based Research Fund	A Study of Sustainability-aware Wireless Digital Twin Networks (WDTNs) with Adaptation	HKMU	1,999,063	Co-I
14 May 2024	R&D Fund	An Investigation of Associations between Body-Worn Inertia Measurement Unit Sensors on Human Activities	HKMU	200,000	Co-I
13 Sep 2023	R&D Fund	Quantum Machine Learning for Electroencephalogram Classification	HKMU	200,000	PI
8 Sep 2023	FDS	Development of Novel Quaternion Signal Processing and Feature Extraction Methods for the Monitoring and Early Detection of Mental Disorders in a Head-based Mobile Health System	RGC	800,960	PI

4 Aug 2023	R&D Fund	Developing Real-Time Intelligent Video Surveillance Systems: From Algorithm Design to Performance Optimization	HKMU	200,000	Co-I
28 Oct 2022	R&D Fund	Intelligent Data-driven Wireless Networks	HKMU	1,480,566	Co-I
1 Mar 2023	Research Donation & RMGS	Evaluation of an Innovative Therapeutic Approach for Social Referencing Disorder in Children with ASD: The Rope Therapy	Research Donation to University (EdUHK)	Donation: 150,000 RMGS: 150,000	Co-PI
1 Jan 2023	Research Donation & RMGS	Preventing Frailty in Elderly Home Residents by Using Gerontechnology	Research Donation to University (HKMU)	Donation: 1,500,000 RMGS: 500,000	Co-I
9 Sep 2022	FDS	Development of Smart Analytic System with IoT Technology for Renewable Energy Feed-in Tariff in Suburban Agricultural Area	RGC	1,183,975	Co-I
25 Apr 2022	RMGS	Extracting Causal Relationship Between Emotion and Cause from Documents	UGC	948,896	PI
10 Sep 2021	FDS	Modelling of Pupillary Muscles' Range Nonlinearity Effects on Pupil-based Evaluation of Autonomic Nervous System	RGC	761,400	PI
20 Apr 2022	RMGS	Interdisciplinary Research Development on Smart City	UGC	5,326,800	Area Leader
27 Jan 2022	RIF	Smart City Data Collection and Generation for Open Data Repository	HKMU	938,501	Co-I
7 Apr 2021	RMGS	Deployment of Renewable Energy-based Charging Stations for Powering Scientific Outposts and Data Collection Kiosks in Off-grid Villages	UGC	157,200	PI
30 Sep 2020	R&D Fund	A Modelling Approach for Exploring Pupillary Dynamics under the Effect of Increasing Parasympathetic Activities	S&T, OUHK	40,000	PI
24 Sep 2019	R&D Fund	Investigation of Pupillary Dynamics using a Head-Mounted System	OUHK	80,000	PI
18 Sep 2015	FDS	Development of an Exergaming System with Haptic Feedback for the Investigation of Energy Expenditure and Muscle Activities during Sports Training	RGC	663,519	PI
30 Apr 2012	R&D Fund	Feasibility Study of Using Wireless Tablet Computers for On-site Inspection & Certification of Commodities	S&T, OUHK	13,266	PI
11 Mar 2010	PACRD	Development of a Novel Biosensor-Integrated Shirt for Mobile Health	OUHK	399,335	PI

Publications

Refereed Journal Papers

J. Gu, **K. Hung**, B.W.-K. Ling, D.H.-K. Chow, and Y. Zhou, “Complex Singular Spectrum Analysis Leveraging Adaptive Taper Windows for Enhancing Mode Reconstruction from Multivariate Signals,” *IEEE Signal Processing Letters*, DOI: 10.1109/LSP.2025.3562823, Apr 2025. (Impact factor: 3.2)

J. Gu, **K. Hung**, B.W.K. Ling, Y. Zhou, D.H.K. Chow, and G.M.T. Man, "Design of Regularized Taper Window with Alternating Optimization for Reducing Component Mixing in Generalized Singular Spectrum Analysis," *IEEE Transactions on Instrumentation and Measurement,* DOI: 10.1109/TIM.2025.3548820, Mar 2025. (Impact factor: 5.6)

R. Ho, **K. Hung**, K.T. Chui, Y. Fu, and H.C. Wu, "EEG-based Dementia Classification using CS-EMD Synchrony Features and Quantum Machine Learning," *IEEE Transactions on Consumer Electronics*, DOI: 10.1109/TCE.2025.3548303, Mar 2025. (Impact factor: 4.3)

T. Zhou, C. Ding, C. Jing, F. Liu, **K. Hung**, H. Pham, M. Mahmud, Z. Lyu, S. Qiao, S. Wang, and K.-F. Tsang, "BG-GAN: Generative AI Enable Representing Brain Structure-Function Connections for Alzheimer’s Disease," *IEEE Transactions on Consumer Electronics*, DOI: 10.1109/TCE.2025.3543943, Feb 2025. (Impact factor: 4.3)

G.M.T. Man, **K. Hung**, and J. Wang, "Study of Brain Connectivity by Multichannel EEG Quaternion Principal Component Analysis for Alzheimer's Disease Classification" *IEIE Transactions on Smart Processing and Computing*, (Accepted), Jan 2025.

H.C. Wu, P. Yuen, E.H.S. Lau, **K. Hung**, K.T. Chui, and A.K.F. Lui, "Deep Circadian-Informed Probability Refinement Network for Pedestrian Intent Classification in Urban Complex," *IET Electronics Letters*, DOI: 10.1049/ell2.70159, Jan 2025. (Impact factor: 0.7)

Z. Li, J. Bao, Y. Liu, S.-K. Au Yeung, S. Zhu, and **K. Hung**, "Complement Decoded Point Cloud with Coordinate Adjustment for Video-based Point Cloud Compression," *Signal, Image and Video Processing*, DOI: 10.1007/s11760-024-03602-6*,* Dec 2024. (Impact factor: 2.00)

J. Feng, Y. Fu, Z. Shi, Y. Liu, and **K. Hung**, "Joint Optimization for Mobile Crowdsensing Systems with Reliability Consideration," *IEEE Transactions on Cognitive Communications and Networking*, DOI: 10.1109/TCCN.2024.3504477, Nov 2024. (Impact factor: 7.40)

Y. Zhou, Y. Fu, Z. Shi, **K. Hung**, T.Q.S. Quek, Y. Zhang, "Sustainable Placement with Cost Minimization in Wireless Digital Twin Networks," *IEEE Transactions on Vehicular Technology*, DOI: 10.1109/TVT.2024.3463671, Sep 2024. (Impact factor: 6.10).

Z.A. Iqbal, **K. Hung**, J. Gu, H.-K.D. Chow, “Differences in the Stride Time and Lower Limb Joint Angles and Their Variability during Distance Running Between Treadmill and Over-Ground: A Crossover Study,” *The Journal of Sports Medicine and Physical Fitness*, DOI: 10.23736/S0022-4707.24.16120-8, Sep 2024. (Impact factor: 1.2)

H.C. Wu, E.H.S. Lau, P.C.H. Yuen, **K. Hung**, J.K.T Chui, A.K.F. Lui, "WTTFNet: A Weather-Time-Trajectory Fusion Network for Pedestrian Trajectory Prediction in Urban Complex," *IEEE Access*, Vol. 12, pp. 126611-126623, Sep 2024. (Impact factor: 3.4)

J. Gu, **K. Hung**, B.W.-K. Ling, D.H.-K. Chow, Y. Zhou, Y. Fu, and S.H. Fun, "Generalized Singular Spectrum Analysis for the Decomposition and Analysis of Non-Stationary Signals," *Journal of the Franklin Institute*, DOI: 10.1016/j.franklin.2024.106696, Feb 2024. (Impact factor: 3.80)

J. Gu, Y. Fu, **K. Hung**, "On Intelligent Placement Decision-Making Algorithms for Wireless Digital Twin Networks via Bandit Learning," *IEEE Transactions on Vehicular Technology*, DOI: 10.1109/TVT.2024.3360959, Feb 2024. (Impact factor: 6.239)

K. Shu, Y. Fu, **K. Hung**, "A Diversified Recommendation Scheme for Wireless Content Caching Networks," *IEEE Internet of Things Journal*, DOI: 10.1109/JIOT.20233343364, Dec 2023. (Impact factor: 10.238)
Y. Fu, Y. Shan, Q. Zhu, **K. Hung**, Y. Wu, T.Q.S. Quek, "A Distributed Microservice-aware Paradigm for 6G: Challenges, Principles, and Research Opportunities," *IEEE Network Magazine*, DOI: 10.1109/MNET.2023.3321528, Oct 2023. (Impact factor: 10.294)

A.K.F. Lui, Y.H. Chan, and **K. Hung**, "Functional Objects in Urban Environments and Pedestrian Trajectory Modelling," *Sensors*, Vol. 23, Iss. 10, 4882, May 2023. (Impact factor: 3.847)

Y. Fu, J. Liu, J. Ke, J.K.T. Chui, and **K.K.F. Hung**, "Optimal and Suboptimal Dynamic Cache Update Algorithms for Wireless Cellular Networks," *IEEE Wireless Communications Letter*, Vol 11, Iss. 12, pp. 2610-2614, December 2022. (Impact factor: 5.281)

X. Li, K.-Y. Wong, **K. Hung**, and Y. Wang, "Joint Optimization Scheme for Intelligent Reflecting Surface Aided Multi-Relay Networks," *IET Communications*, Vol. 16, Iss. 3, pp. 1498-1508, August 2022 (Impact factor: 1.664)

R. Ho and **K. Hung**, "EEG Analysis and Classification Based on Cardinal Spline Empirical Mode Decomposition and Synchrony Features," *Medical & Biological Engineering & Computing*, Vol. 60, pp. 2359-2372, June 2022. (Impact factor: 2.022)

J.O. Ajadi, A. Wong, T. Mahmood, and **K. Hung**, "A New Multivariate CUSUM Chart for Monitoring of Covariance Matrix with Individual Observations Under Estimated Parameter," *Quality and Reliability Engineering International*, Vol. 38, Iss. 2, pp. 834-847, March 2022. (Impact factor: 1.718)

K.-W. Tse and **K. Hung**, "Framework for User Behavioral Biometric Identification Using a Multimodal Scheme with Keystroke Trajectory Feature and Recurrent Neural Network on a Mobile Platform," *IET Biometrics*, Vol. 11, Iss. 2, pp. 157-170, March 2022. (Impact factor: 1.821)

K. Hung, H.-Y. Cheung, N. Wan, E. Lee, C.-N. Lai, K. Pan, R. Liang, C. Chu, S.-O. Choy, D. Ng, and D. Chow, "Design, Development, and Evaluation of Upper and Lower Limb Orthoses with Intelligent Control for Rehabilitation," *IET Science, Measurement & Technology*, Vol 15, Iss. 9, pp. 738-748, November 2021. (Impact factor: 2.643)

J.O. Ajadi, **K. Hung**, M. Riaz, N.A. Ajadi, and T. Mahmood, "On the Multivariate Progressive Control Chart for Effective Monitoring of Covariance Matrix," *Quality and Reliability Engineering International*, Vol. 37, Iss. 6, pp. 2724-2737, October 2021. (Impact factor: 1.718)

S. Zhang, Y. Cheng, D. Luo, J. He, K.-Y. Wong, and **K. Hung**, "Channel Attention Convolutional Neural Network for Chinese Baijiu Detection with E-Nose," *IEEE Sensors Journal*, Vol. 21, Iss. 14, pp. 16170-16182, July 2021. (Impact factor: 3.076)

J. Guo, Y. Cheng, D. Luo, K.-Y. Wong, **K. Hung**, and X. Li, "ODRP: A Deep Learning Framework for Odor Descriptor Rating Prediction Using Electronic Nose, *IEEE Sensors Journal*, vol. 21, Iss. 13, pp. 15012-15021, July 2021. (Impact factor: 3.076)

X. Li, D. Luo, Y. Cheng, K.-Y. Wong, and **K. Hung**, "Identifying the Primary Odor Perception Descriptors by using Multi-output Regression Models," *Applied Sciences*, Vol. 11, Iss. 8, 3320, April 2021. (Impact factor: 2.474)

X. Li, D. Luo, Y. Cheng, K.-Y. Wong, and **K. Hung**, "A Perception-driven Framework for Predicting Missing Odor Perceptual Ratings and an Exploration of Odor Perceptual Space," *IEEE Access*, vol. 8, Iss. 1, pp. 29595-29607, February 2020. (Impact factor: 4.098)

D. Wu, Y. Cheng, D. Luo, K.-Y. Wong, **K. Hung**, and Z. Yan, "POP-CNN: Predicting Odor Pleasantness with Convolutional Neural Network," *IEEE Sensors Journal*, vol. 19, Iss. 23, pp. 11337-11345, December 2019. (Impact factor: 2.617)

Y. Cheng, A. Wong, **K. Hung**, Z. Li, and W. Li, "Deep Nearest Class Mean Model for Incremental Odor Classification," *IEEE Transactions on Instrumentation and Measurement*, vol. 68, Iss. 4, pp. 952-962, April 2019. (Impact factor 2.456)

A. Wong, K.P. Pun, Y.T. Zhang, and **K. Hung**, "A near-infrared heart rate measurement IC with very low cutoff frequency using current steering technique," *IEEE Transactions on Circuits & Systems: Part-I*, vol. 52, no. 12, pp. 2642-2647, December 2005. (Impact factor 2.937)

K. Hung and Y.T. Zhang, "Implementation of a WAP-based telemedicine system for patient-monitoring," in *IEEE Transactions on Information Technology in Biomedicine*, vol. 7, no.2, 2003. (Impact factor 2.493)

Y.T. Zhang, L. Li, **K. Hung**, and J. Woo, "Telemedicine and Cyberhospital for Health Care Delivery in the 21st Century," *Journal of World Medical Instrumentation*, 2000.

Books Edited

K.Y. Angus Wong, **K.F. Kevin Hung**, and K.L. Eddie Law, Eds., *Smart Cities, Smart System and Smart Environment Awareness*, Environmental Publication House Hong Kong. Hong Kong, 2017.

Book Chapter

C.C.Y. Poon and **K. Hung**, "Mobile Health (m-Health): Intelligent Closed-Loop Solutions for Personalised Healthcare," in *The Handbook of Electronic Medicine, Electronic Health, Telemedicine, Telehealth and Mobile Health*, CRC Press, December 2015.

K. Hung, C.C. Lee, and S.-O. Choy, "Ubiquitous Health Monitoring: Integration of Wearable Sensors, Novel Sensing Techniques, and Body Sensor Networks," in *Mobile Health (mHealth): The Technology Road Map*, Springer, March 2015.

K. Hung, course materials (Units 1 to 5) for distance-learning course *TC S372: Product Environmental, Health and Safety Standards*, OUHK, 2012.

Hung, K., Bao S.D., and Zhang, Y.T., "Mobile Health," in *Encyclopedia of Wireless & Mobile Communications*, Taylor & Francis, 2008.

Hung, K. and Zhang, Y.T., "Telemedicine," in *Wiley Encyclopedia of Biomedical Engineering*, John Wiley & Sons, 2006.

Hung, K. and Zhang, Y.T., "Wireless Internet in Telemedicine," in *Wireless Internet Handbook: Technologies, Standards & Applications*, CRC Press, 2003.

Conference Papers

J. Dai, **K. Hung**, K.T. Chui, R. Ho, and J. Gu, "Neural Architecture Search for Medical Image Classification via Latent Space and Evolutionary Optimization" in *Proc. Neural Computing for Advanced Applications*, Hong Kong, July 2025.

Z. Li, Y. Liu, S.-K. Au Yeung, S. Zhu, and **K. Hung**, "An Investigation on Graph Convolution Networks for Color Enhancements of V-PCC," in *Proc. Asia Symposium on Image Processing*, Tsukuba, Japan, June 2025.

K. Hung, G.M.-T. Man, K.T. Chui, D.H.-K Chow, B.W.-K. Ling, and S.H. Pun, "Quaternion Interpolation for Augmenting Eye Dynamic Signals: Tackling Class Imbalance in Depression Severity Prediction Using Smart Eyewear," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2025*, Penang, Malaysia, May 2025.

T.H.C. Choy, **K. Hung**, R. Ho, and G.M.-T. Man, "Parallel Implementation of Ensemble Empirical Model Decomposition in EEG Signal Processing," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2025*, Penang, Malaysia, May 2025.

W.T. Chan, **K. Hung**, R. Ho, and G.M.-T. Man, "Optimizing Confidence Scoring in RAG-based LLM Chatbots for Technical Support Services: A Prompt Engineering Approach," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2025*, Penang, Malaysia, May 2025.

K. Hung, G.M.-T. Man, K.T. Chui, D.H.-K Chow, B.W.-K. Ling, S.H. Pun, and T.-W. Liu, "Window-Based Quaternion Principal Components Analysis of Eye Gaze Dynamics for Depression Severity Prediction," in *Proc. IEEE TENCON 2024*, Singapore, December 2024.

K. Hung, B.W.-K. Ling, D.H.-K Chow, S.H. Pun, and G.M.-T. Man, "Development of a Pupillary Plant Model for Investigating the Effects of Range Nonlinearity on Pupil Size Variability Signal," in *Proc. IEEE TENCON 2024, Singapore*, December 2024.

H.-C. Lee, **K. Hung**, G.M.-T. Man, R. Ho, and M. Leung, "Development of an RAG-Based LLM Chatbot for Enhancing Technical Support Service," in *Proc. IEEE TENCON 2024, Singapore*, December 2024.

K.S. Ng, F. Yan, and **K. Hung**, "Preliminary Study of LLM-Based Wordlist Generation for Validating Broken Web Access Control," in *Proc. IEEE TENCON 2024*, Singapore, December 2024.

J. Fu, S.-K. Au Yeung, and **K. Hung**, "A Lightweight End-to-end Anti-spoofing Voice Model Based on WavLM," in *Proc. The 8th International Conference on Algorithms, Computing and Systems*, Hong Kong, October 2024.

K.T. Chui, J. Liu, **K. Hung**, H.C. Wu, and M. Zhao, "A Preliminary Study of the Stressed and Drowsy Driving Prediction Models Using Semi-Supervised Learning," in *Proc. The 8th International Conference on Algorithms, Computing and Systems,* Hong Kong, October 2024.

C.H.J. Leung, Y. Yi, L. Kuai, Z. Li, S.K.J. Au Yeung, K.W.J. Lee, K.H.K. Ho, and **K. Hung**, "RAG for Question-Answering for Vocal Training Based on Domain Knowledge Base," in *Proc. The 11th International Conference on Behavioural and Social Computing*, Harbin, China, August 2024.

R. Ho and **K. Hung**, "CEEMD-based Multivariate Financial Time Series Forecasting Using a Temporal Fusion Transformer," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2024*, Penang, Malaysia, May 2024.

Y.K. Kwok, J.S.K. Au Yeung, Z. Li, and **K. Hung**, "Cantonese to Written Chinese Translation via HuggingFace Translation Pipeline," in *Proc. 2023 7th International Conference on Natural Language Processing and Information Retrieval*, Seoul, South Korea, December 2023.

Z. Li, J. Bao, Y Liu, S.K. Au Yeung, S. Zhu, and **K. Hung**, "Sparse Fully Convolutional Network for Video-based Point Cloud Compression Color Enhancement," in *Proc. 5th Asia Digital Image Processing Conference*, Kyoto, Japan, December 2023.

W. Han, Z. Li, H. Xie, **K. Hung**, and M. Wang, "Beyond Scores: A Novel Method for Predicting Student Performance Based on Rank and Positional Embedding," in *Proc. 10th International Conference on Behavioural and Social Computing,* Larnaca, Cyprus, October 2023.

K. Hung, G.M.T. Man, J.K.T. Chui, D.H.K. Chow, B.W.K. Ling, and S.-H. Pun, "Model-driving Simulation of Eye Gaze Dynamics in Standard Visual Cognitive Assessments," in *Proc. 8th International Conference on Instrumentation, Control, and Automation*, Jakarta, Indonesia, August 2023.

J. Gu, **K. Hung**, B.W.K. Ling, and D.H.K. Chow, "Evaluation of the Performance of Generalized Singular Spectrum Analysis Model in Attenuation of Spectral Leakage," in *Proc. 8th International Conference on Instrumentation, Control, and Automation*, Jakarta, Indonesia, August 2023.

R. Minhaj, **K. Hung**, and G.M.T. Man, "Development of a BCI System for Enhancing Human-Robot Interaction in Cognitive Stimulation Therapy," in *Proc. 8th International Conference on Instrumentation, Control, and Automation*, Jakarta, Indonesia, August 2023.

L. Huang, **K. Hung**, and G.M.T. Man, "Development of a Low-cost Smart Eyewear System for Eye and Head Movement Measurement and Analysis," in *Proc. 8th International Conference on Instrumentation, Control, and Automation*, Jakarta, Indonesia, August 2023.

J. Gu, **K. Hung**, B.W.K. Ling, and D.H.K. Chow, "Evaluation of the Performance of Generalized Singular Spectrum Analysis Model in Attenuation of Spectral Leakage," in *Proc. 8th International Conference on Instrumentation, Control, and Automation*, Jakarta, Indonesia, August 2023.

R. Ho and **K. Hung**, "Exploring Quantum Machine Learning for Electroencephalogram Classification," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2023*, Penang, Malaysia, May 2023.

K. Hung and G. Man, "Quaternion Singular Spectrum Analysis of Pupillary Dynamics for Health Monitoring," in Proc. 4th *IEEE Eurasia Conference on IoT, Communication and Engineering 2022*, Yunlin, Taiwan, Oct 2022.

R. Ho and **K. Hung**, "Performance Comparison of Machine Learning Algorithms in Dementia Classification Using Electroencephalogram Decomposition," in *Proc. IEEE TENCON 2022*, Hong Kong Nov 2022.

R. Ho and **K. Hung**, "Empirical Mode Decomposition Method Based on Cardinal Spline and its Application on Electroencephalogram Decomposition," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2022*, Malaysia, May 2022.

S. Xu and **K. Hung**, "Development of an AI-based System for Automatic Detection and Recognition of Weapons in Surveillance Videos," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2020*, Penang, Malaysia, Apr 2020.

R. Ho and **K. Hung**, "A Comparative Investigation of Mode Mixing in EEG Decomposition Using EMD, EEMD and M-EMD," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2020*, Penang, Malaysia, Apr 2020.

K.-W. Tse and **K. Hung**, "User Behavioral Biometrics Identification on Mobile Platform using Multimodal Fusion of Keystroke and Swipe Dynamics and Recurrent Neural Network," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2020*, Penang, Malaysia, Apr 2020.

C.-H. Chau, **K. Hung**, C.-P. Ko, and S.-F. Lo, "Design and Development of a Mobile Application and Wearable System for CPR Training," in *Proc 2019 IEEE 6th International Conference on Engineering Technologies and Applied Sciences*, Kuala Lumpur, Malaysia, Dec 2019.

K.-H. Leung, **K. Hung**, C.-P. Ko, and S.-F. Lo, "Design and Development of an Augmented Reality Mobile Application for Medical Training," in *Proc 2019 IEEE 6th International Conference on Engineering Technologies and Applied Sciences*, Kuala Lumpur, Malaysia, Dec 2019.

K. Hung, "Modelling Pupillary Dynamics including Pupillary Reflex and Pupil Size Variability," in *Proc. 6th International Conference on Bio-Sensing Technology*, Kuala Lumpur, Malaysia, Jun 2019.

K.-W. Tse and **K. Hung**, "Behavioral Biometrics Scheme with Keystroke and Swipe Dynamics for User Authentication on Mobile Platform," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2019*, Kota Kinabalu, Malaysia, Apr 2019.

P.-H. Lam and **K. Hung**, "Development of an Asset Tracking and Monitoring Scheme for a Household Item-Sharing Service," in *Proc. IEEE Symposium on Computer Applications and Industrial Electronics 2019*, Kota Kinabalu, Malaysia, Apr 2019.

K. Hung, "Towards the Design of a Mobile Health System for Continuous Monitoring of Ocular Behavior and Cardiovascular Variabilities," in *Proc. 3rd IET International Conference on Technologies for Active and Assisted Living*, London, United Kingdom, Mar 2019.

N. Wan, R. Liang, **K. Hung**, S.-O. Choy, C. Chu, D. Ng, H.-Y. Cheung, and D.H.K. Chow "Development and Evaluation of a Haptic-based Upper-limb Orthosis for Rehabilitation," in *Proc. 5th International Conference on Instrumentation, Communication, Information Technology, and Biomedical Engineering*, Bandung, Indonesia, Nov 2017.

R. Liang, N. Wan, **K. Hung**, S.-H. Choy, C. Chu, D. Ng, and D.H.K. Chow "Development of an Upper-limb Orthosis with Force Haptic Feedback for Rehabilitation," in *Proc. 11th IEEE-EMBS International Summer School and Symposium on Medical Devices and Biosensors*, Shenzhen, China, Jul 2017.

H.-Y. Cheung and **K. Hung**, "Development of a Smart Wristband-based Mobile Application for CPR Training," in *Proc. 11th IEEE-EMBS International Summer School and Symposium on Medical Devices and Biosensors*, Shenzhen, China, Jul 2017.

K. Hung, Tsz-Chung Lee, and Ho-Wai Leung, "Investigation of sEMG Patterns for Detection of Poor Trunk Posture," in *Proc. IEEE ICCE-China 2016*, Guangzhou, China, Dec 2016.

Ho-Fai Tang and **K. Hung**, "Design of a Non-contact Body Temperature Measurement System for Smart Campus," in *Proc. IEEE ICCE-China 2016*, Guangzhou, China, Dec 2016.

K. Hung, N. Wan, S.-O. Choy, C. Chu, and D.H.K. Chow, "Design of an Exergaming System with Haptic Feedback for the Investigation of Energy Expenditure and Muscle Activities", in *Proc. IEEE INDIN 2016*, Poitiers, France, Jul 2016.

Wai Yin Leung and **K. Hung**, "Design and Development of a Low-cost and Multifunctional Pillbox", in *Proc. IEEE ICCE-China 2015*, Shenzhen, China, April 2015.

K. Hung, "Development of an Eye-Based M-Health System", in *Proc. IEEE ICCE-China 2014*, Shenzhen, China, April 2014.

K. Hung, "Pupillary Dynamic Monitoring for Mobile Health," in *Proc. 39th Annual Conference of the IEEE IECON*, Vienna, Austria, Nov 10-15, 2013.

K. Hung, C.C. Lee, W.M. Chan, S.O. Choy, and P. Kwok, "Development of a Wearable System Integrated with Novel Biomedical Sensors for Ubiquitous Healthcare," in *Proc. 34th Annual International Conference of the IEEE-EMBS*, San Diego, Aug 2012.

K. Hung, C.C. Lee, W.M. Chan, S.O. Choy, and P. Kwok, "Development of Novel Wearable Sensors for Mobile Health," in *Proc. IEEE-EMBS Intern. Conf. on Biomedical & Health Informatics*, Shenzhen, January 2012.

C.C. Lee, **K. Hung**, W.M. Chan, S.O. Choy, and P. Kwok, "FBG sensor for physiologic monitoring in m-health application," in *Proc. Asia Communications & Photonics Conf.*, Shanghai, November 2011.

K. Hung, W.M. Chan, C.C. Lee, S.O. Choy, and P. Kwok, "Preliminary Design of an Intelligent Finger-Ring Sensor for Physiologic Monitoring in Mobile Health", in *Proc. AMA-IEEE Medical Technology Conference*, Boston, October 2011.

Q. Liu, P.Y.W. Chiu, Y.T. Zhang, **K. Hung**, and C.C.Y. Poon, "A New Approach for Early Screening of Gastroesophageal Reflux Disease Based on Cardiovascular Responses Induced during Drinking", in *Proc. AMA-IEEE Medical Technology Conference*, Boston, October 2011.

K. Hung, P. Tsang, P. Kwok, M.K. Choi, M.S. Ngan, W.C. Tsang, and T.F. Wong, "Development of a Wireless Telehealth System for Diabetes Management, " presented at *2009 Enhancing Healthcare Education, Research & Practice Symposium*, Hong Kong, July 2009.

K. Hung and Y.T. Zhang, "Preliminary investigation of pupil size variability: toward non-contact assessment of cardiovascular variability," in *Proc. 3rd IEEE EMBS International Summer School on Medical Devices & Biosensor*s, Boston, 2006.

A. Wong, K.P. Pun, Y.T. Zhang, and **K. Hung**, "A near-infrared heart rate sensor IC with very low cutoff frequency using current steering technique," *IEEE Proc. Int. Symp. Circuits Systems*, vol. 3, pp. 2723–2726, May 2005.

K. Hung, Y.T. Zhang, and B. Tai, "Wearable Medical Devices for Tele-Home Healthcare," in *Proc. of the 26th Annu. Intern. IEEE EMBS Conference*, San Francisco, 2004.
K. Hung, B.L. Luk, W.H. Choy, B. Tai, and S.K. Tso, "Multifunction stethoscope for telemedicine," in *Proc. 2nd IEEE EMBS International Summer School on Medical Devices and Biosensors*, 2004.

K. Hung and Y.T. Zhang, "A Tele-Physiological Monitoring System Based on Bluetooth and WAP Devices", in *Proc. Hong Kong International Medical Informatics Conference 2003*, Hong Kong, January 2003.

K. Hung and Y.T. Zhang, "Usage of Bluetooth in Wireless Sensors for Tele-Healthcare," in *Proc. 2nd Joint EMBS-BMES Conf.*, vol. 3, pp. 1881-1882, Houston, 2002.

K.W. Chan, **K. Hung**, and Y.T. Zhang, "Noninvasive and cuffless measurements of blood pressure for telemedicine," in *Proc. 23rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society*, Istanbul, vol. 4., pp. 3592-3593, 2001.

K. Hung and Y.T. Zhang, "WAP-based telemedicine applications", in *Australia Phy. Eng. Sci. Med*., vol. 24, Iss. 4, pp. 196-200, December 2001.

K. Hung and Y.T. Zhang, "WAP-based telemedicine applications", in *Proc. Ann. Conf. of Eng. and the Physical Sci. in Med. & Asia Pacific Conf. on Biomed. Eng*., Fremantle, 2001.

K. Hung and Y.T. Zhang, "On the feasibility of the usage of WAP devices in telemedicine", in *Proc. 2000 IEEE EMBS Int. Conf. on Information Technology Applications in Biomedicine*, pp. 28-31, Arlington, November 2000.

K. Hung and Y.T. Zhang, "A WAP-Based Patient Monitoring System", in *Proc. IEEE EMBS Asia-Pacific Conf. on Biomed. Eng.*, pp. 802-803, Hangzhou, 2000.

Patents

- Fu Yaru, Gu Jialiang, **Hung King Fai Kevin**, "*A Bandit Learning-driven Intelligent Placement Decision-Making Algorithm for Wireless Digital Twin Networks*," Hong Kong Patent HK30096775 , 12 Dec 2023.
- 张元亭, **熊景辉**, 陈舜恒, 滕晓菲, "*指环式生理信息监测装置*" China Patent CN100518630C, 29 Jul 2009.
- 张元亭, **熊景辉**,"*具有综合生理参数测量功能的无线移动通信装置*" China Patent CN100456859C, 28 Jan 2009.

Honors and Scholarships

12/2021 President's Awards for Teaching Excellence, HKMU

03/2018 Best Paper Award, for paper entitled, "Eye-based Mobile Health System: more than meets the eye," in IEEE International Workshop on System Biology & Biomedical Systems 2018, Hong Kong.

12/2016 Best Paper Award, for paper entitled, "Investigation of sEMG Patterns for Detection of Poor Trunk Posture," in Connected World & Smart Living Track, IEEE International Conference on Consumer Electronics – China 2016, Guangzhou, China.

12/2015 President's Awards for Teaching Excellence, OUHK

04/2015 Best Paper Award, for paper entitled, "Design and Development of a Low Cost Intelligent Pillbox," IEEE International Conference on Consumer Electronics – China 2015, Shenzhen, China.

04/2014 Best Paper Award, for paper entitled, "Development of an Eye-Based M-Health System," IEEE International Conference on Consumer Electronics – China 2014, Shenzhen, China.

11/2013 Best Paper Award, for paper entitled, "Development of an Eye-Based M-Health System," in Health & Sustainable Technologies for Next Generation Home and Building Automation Session, 39th Annual Conference of the IEEE Industrial Electronic Society, Vienna, Austria.

12/2007 Outstanding Paper Award (most citations in previous 5 years) for paper entitled, "Implementation of a WAP-based telemedicine system for patient-monitoring," IEEE Transactions on Information Technology in Biomedicine (T-ITB).

12/2001 Outstanding Tutor Award: Department of Electronic Engineering, The Chinese University of Hong Kong. For tutoring undergraduate courses: "Signals & Systems" and "Biomedical Instrumentation & Sensors."

12/2000 Outstanding Tutor Award: Department of Electronic Engineering, The Chinese University of Hong Kong. For tutoring undergraduate course: "Biomedical Instrumentation & Sensors."

Supervised award-winning student projects:

08/2024 Finalist for project entitled, "*LLM Bot Integration for Enhanced Technical Support*," in Hong Kong ICT Awards 2024: Student Innovation Award (2024).

08/2024 Certificate of Merit for project entitled, "*LLM Bot Integration for Enhanced Technical Support*," in Innovate for Future 2024, Hong Kong Electronics and Technologies Association (2024).

05/2024 Finalist for project entitled, "*LLM Bot Integration for Enhanced Technical Support*," in 2024 第六屆大灣區 STEAM 卓越獎(香港)總決賽 (2024).

08/2023 Certificate of Excellence (Top 5, Tertiary School Stream) for project entitled, "Brain Computer Interface Feedback System for Dementia Patients," in Innovate for Future 2023, Hong Kong Electronics and Technologies Association (2023).

07/2023 Best Pitching Team and HKD 100,000 Award Winner for project entitled "CogniCare" in MetroChallenge 2023, HKMU (2023).

06/2023 Third Prize (IT Category) for project entitled, "Brain Computer Interface Feedback System for Dementia Patients," in 9th Hong Kong University Student Innovation and Entrepreneurship Competition, Hong Kong New Generation Cultural Association (2023).

11/2020 Merit for project entitled, "Development of an AI-based System for Automatic Detection and Recognition of Weapons in Surveillance Video," in Inter-Institutional Competition on Facility Management Project Presentation 2020, IFMA Hong Kong Chapter (2020).

10/2018 Merit for project entitled, "Development of Image Feature Extraction and Pattern Rendering Techniques for a Chocolate Printer," in HKEIA Innovation & Technology Project Competition Award: For Students of Electronic Engineering or Related Engineering Fields (2018).

05/2018 Merit for project entitled, "Design and Development of a Facial Recognition Algorithm for Access Control," in Inter-Institutional Competition on Facility Management Project Presentation 2018, IFMA Hong Kong Chapter (2018).

10/2017 Merit for project entitled, "Design and Development of a Haptic Orthosis for Upper Limb," in HKEIA Innovation & Technology Project Competition Award: For Students of Electronic Engineering or Related Engineering Fields (2017).

06/2014 2nd Prize and Best Practicality Award for project entitled, "Development of a Detection Algorithm for Wrist-Worn Fall Detector," IEEE Macau Project Competition 2014.

Services in professional bodies

01/2024 – Present	Vice Chair, IEEE Hong Kong Section
01/2025 – Present	Past Chair, Electronics & Communications Section, Institution of Engineering & Technology (IET) Hong Kong
01/2022 – Present	Member, Branch Committee, Institute of Engineering & Technology (IET) Hong Kong
06/2024 – Present	Honorary Treasurer, Chinese Institute of Electronics (CIE), Hong Kong
04/2019 – 05/2024	Honorary Secretary, Chinese Institute of Electronics (CIE), Hong Kong
01/2023 – 12/2024	Immediate Past Chair, Electronics & Communications Section, Institution of Engineering & Technology (IET) Hong Kong
01/2021 - 12/2022	Chair, Electronics & Communications Section, Institution of Engineering & Technology (IET) Hong Kong
10/2018 – 12/2020	Vice-Chair, Electronics & Communications Section, Institution of Engineering & Technology (IET) Hong Kong
10/2017 – 09/2018	Honorary Treasurer, Electronics & Communications Section, Institution of Engineering & Technology (IET) Hong Kong
10/2017 – 09/2018	Ordinary Member (Section Committee), Branch Committee, Institution of Engineering & Technology (IET) Hong Kong
10/2016 – 09/2017	Honorary Secretary, Electronics & Communications Section, Institution of Engineering & Technology (IET) Hong Kong
12/2017 – 12/2018	Alternate Member, Technical Regulatory Working Group, Office of the Communications Authority (OFCA)
01/2016 – 12/2018	Alternate Member, Telecommunications Regulatory Affairs Advisory Committee, Office of the Communications Authority (OFCA)
01/2015 – 03/2019	Committee Member, Chinese Institute of Electronics (CIE), Hong Kong
09/2006 – Present	Committee Member (since 2006) Chair (2010-2012), Treasurer (2009-2010) Founding Secretary (2006-2008), Institute of Electrical & Electronics Engineers (IEEE) Engineering in Medicine & Biology Society (EMBS) Hong Kong – Macau Joint Chapter

Study Tours (funding proposal, tour planning & coordination, guiding the tour):

Date	Funding Source	Study Tour	Number of participants	Amount (HK$)
15 – 19 Mar 2023	ROA	Study Tour to Singapore	12	114,480
20 – 28 Oct 2019	ROA & OUIE	Study Tour to Finland	24	638,430
12 - 13 Mar 2019	WK	Study Tour to Guangzhou	24	21,410
18 - 26 Jun 2018	ROA & OUIE	Study Tour to UK	16	170,755
4 - 12 Jun 2018	ROA & WK	Study Tour to Canada	24	222,959
12 – 15 Mar 2018	4MG	Study Tour to Macau & Zhuhai	22	36,513
13 - 15 Mar 2017	MES	Study Tour to Zhuhai	22	36,750
22 - 25 Oct 2016	WK & SSEBR	Study Tour to Vietnam	22	61,983
28 - 30 Oct 2014	CASH	Study Tour to Macau	27	36,222
29 Jan 2011	WK	Study Tour to Macau	16	6,617

Supervision of Postgraduate Students:

- FU Jingchang, "Investigation on Deep Learning-based Fake Voice Detection Methods," Doctor of Philosophy, HKMU, Jan 2024 – present.
- NG Kong Sum, "Scenario-Based Traffic Generation Framework for Cyber Defense Validation," Master of Philosophy, HKMU, Sep 2023 – present.
- KWOK Yick Kan, "Automated Optimization of Website User Experience Using Machine Learning," Doctor of Philosophy, HKMU, Jan 2023 – present.
- LI Zeliang, "Advanced Point Cloud Data Processing and 3D Object Detection Algorithm for Point Cloud Data," Master of Philosophy, HKMU, Sep 2022 – present.
- GU Jialiang, "Design and Optimization of Generalized Singular Spectrum Analysis Framework for Decomposition and Reconstruction of Non-Stationary Signals," Doctor of Philosophy, HKMU, Nov 2021 – present.
- Raymond HO, "Feature Extraction and Classification of Electroencephalogram using Empirical Mode Decomposition," Doctor of Philosophy, HKMU, Sep 2019 – Apr 2023.
- TSE Ka Wing, "Investigation and Development of a Novel Behavioural Biometric Technique Based on Deep Learning," Doctor of Engineering, HKMU, Sep 2017 – Mar 2024.

Invited Judge Panel:

- 2024「童擁AI」CODING ∞ 環境科技比賽暨作品展 (中學組), Centum Charitas Foundation (百仁基金) – Head of Judge Panel (18 May 2024)
- ESF Innovation Fair 2024, English Schools Foundation (24 Feb 2024).
- Innovate for Future 2021 – Final Pitch cum Demonstration Day, Hong Kong Electronics & Technologies Association (Jul 2022).
- The 3rd Future Engineer Grand Challenge: Innovative Future after COVID-19, Hong Kong STEM Education Alliance (Jul 2021).
- Final assessment presentations for MEDE3010 Integrated Project Course, Medical Engineering Programme, The University of Hong Kong (Nov 2011, Dec 2012, Nov 2014, Dec 2015, Nov 2016, Nov 2017, Nov 2018).
- Invited judge for HKIE END Project Competition 2017 (HKEPC 2017) (Mar 2017).
- Invited judge for 第八屆全澳資訊科技大賽 - ALICE三維編程比賽, Macao Polytechnic Institute (Jun 2016).
- Invited judge for HKIE END Project Competition 2016 (HKEPC 2016) (Mar 2016).
- Invited judge and mentor for projects related to innovative design of wheelchair for improved accessibility, Wheel Power Challenge – "Make it Wheel" Hackathon (滾動創新工作坊) at MakerBay, organized by VOLTRA (Dec 2015).
- Student assessment presentation for BME31103 Applied Electrophysiology, Interdisciplinary Division of Biomedical Engineering, The Polytechnic University of Hong Kong (Apr 2015).