NAME	Yu-Kai (YK) Wang, Ph. D.
POSITION TITLE	Senior Lecturer (UTS)
ADDRESS	Room 117, Level 7, Building 11, 81 Broadway, Ultimo, NSW, 2007
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EDUCATION

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	Department
National Taichung University of Education	B.S.	2006	Mathematics Education
National Chiao Tung University, Taiwan	M.S.	2009	Biomedical Engineering
National Chiao Tung University, Taiwan	Ph.D.	2015	Computer Science and Engineering

TEACHING SUBJECTS

Data Structure, Algorithm, Artificial Intelligence, Computational Intelligence, Fuzzy Systems, Software Engineering Studio, Software Innovation Studio, Pattern Recognition, and Data Mining

RESEARCH INTEREST

Neural Engineering in real-world experience, Big data analytics for biomedical and health informatics, EEG signal processing and modeling, Brain-computer interference, Artificial Neural Networks

A. Personal Statement

I received the B.S. degree in mathematics education from National Taichung University of Education, Taichung, Taiwan, in 2006, and the M.S. degree in biomedical engineering from National Chiao Tung University, Hsinchu Taiwan, in 2009. I received the Ph.D. degree in Department of Computer Science, National Chiao Tung University (NCTU), Hsinchu, Taiwan, in 2015. During these years, I also work on dynamic cognitive science and neuro-engineering with the research in Swartz Center for Computational Neuroscience (SCCN), University of California, San Diego (UCSD).

I lectured internet and safety, technology and life, and digital multimedia courses in Department of Management and Information, National Open University, Taipei, Taiwan. I have taught and supervised master degree students to complete their research projects. I am also co-supervising four PhD students now. These strengthened my teaching and supervision experiences.

Currently, I am a lecturer and a scientific leader at computational intelligence and brain computer interface (CIBCI) lab. To achieve better performance of electroencephalogram (EEG)-based brain computer interface (BCI) application, the current interests of my research are to integrate the artificial intelligence (AI) technologies with neuroscience knowledge for exploring the human cognitive functions, discovering the relationships between human brain dynamics and cognition, and diagnosing neurological diseases. I lead a research group studying human brain dynamics in natural environments to support international collaborative research projects funded by US Army Research Laboratory (US ARL) and Lockheed Martins. I have developed several machine learning algorithms for brain-computer interfaces and gained a lot of valuable insights into the brain-behaviour relationships. These interdisciplinary collaborations enable me to inject new energy into the research landscape.

My research excellence has received recognition: (1) I have been invited to serve as the referee for high-impact journals such as IEEE Trans. Fuzzy Sys., IEEE Trans. Neural Net. Lear. Sys., IEEE Trans. Cogn. and Deve. Sys. and NeuroImage; (2) I serve as the CI and Co-CI of six research projects funded by the US ARL and AU companies. The six projects received AUD$~750K in total in grant funding; (3) I have made substantial contributions to the field of biomedical signal processing and machine learning, with the research articles published in top journals including IEEE Trans. on Neural Systems and Rehabilitation Engineering, International Journal of Neural Systems, IEEE SMC, PlusOne and NeuroComputing.

B. Research Support

Project	Position	Sponsor
Miniature Physiological Sensors and Decoders for Brain-Robot Interaction 2023/07-2025/12 PI Mission: I am responsible to develop Augmented Reality BCI systems that can enhance the reliability of human-robot interaction.	**Co-PI**	Defence Innovation Hub, AU $ 3,989,838 AUD
Edge AI-enabled Healthcare System for Early Cervical Myelopathy Detection 2023/04-2023/12 CI Mission: I am responsible to transfer the AI model to mobile devices for decomposing real-time human pose which is one early sign of cervical myelopathy detection.	**CI**	University of Technology Sydney, AU $19,046 AUD
Metacare: AI-powered automated detection of VR motion sickness for users struggling in the Metaverse-based transport 2023/04-2023/12 CI Mission: I am responsible to build the AI model to extract significant patterns of brain dynamics and predict the continuous changes of motionsickness.	**CI**	The Royal Society of Edinburgh, UK $ 14,500 AUD
Brain Networks and Artificial Intelligence Empower Early Alzheimer's Disease Identification 2023/03-2023/12 CI Mission: I am responsible to develop graph convolution network-based algorithm to explore the significant brain networks of Alzheimer diseases.	**CI**	Australia India Institute $ 10,000 AUD
Validation of a new clinical assessment tool for assessing and monitoring cervical myelopathy 2022/09-2023/09 CI Mission: I am responsible to synchronise all data streams and develop algorithms for real-time human pose decomposition which is one early sign of cervical myelopathy detection.	**CI**	AO Spine Institute $ 7,500 AUD
Evaluating the Impact of Fatigue on Warfighter Performance and Technology 2021/11-2022/11 PI Mission: I am responsible to design the experiment, record long-term data and do data analytics.	**Co-CI**	Lockheed Martin Corporation, USA $150,000 AUD
Cognitive Trust-Based Task Assignment in Human-Machine Teaming 2021/01-2022/12 PI Mission: I am responsible to develop advanced computational intelligence approaches for representing the uncertainties in machine and validate the performance of whole teaming system.	**Co-CI**	Defence Science and Technology, AU $200,000 AUD
Miniature Physiological Sensors and Decoders for Brain-Robot Interaction 2020/02-2022/02 PI Mission: I am responsible to develop closed-loop BCI systems that can provide plain interface for better interaction with robots.	**PI**	Defence Innovation Hub, AU $ 1,109,483 AUD
Covert State Discovery and Multi-Agent Reinforcement Learning for Human-Autonomy Teaming 2019/11-2023/06 PI Mission: I am responsible to measure the human trust objectively and model the better human-robot interaction.	**Co-CI**	Office of Naval Research Global, USA $ 143,905 AUD
Closed-Loop Multi-Modal Approach for Adaptive Learning 2019/8-2020/8 CI Mission: I am responsible to develop a closed-loop multi-modal approach that can adaptively provide learning content for maximizing learning impact and reducing the time taken to reach proficiency and expertise.	**CI**	University of Technology Sydney, AU $36,324 AUD
Build a Human-Machine Interaction Testbed by Motion Platform 2019/9-2020/3 CI Mission: I am responsible for integrating multiple physiological devices into dynamic motion platform for real-time data streaming and analyzing.	**CI**	University of Technology Sydney, AU $10,000 AUD

Hierarchical Multi-Agent Navigation 2018/08-2021/07 CI Mission: I am responsible for building one hierarchical clustering model to identify the best strategy during navigation.	**Co-CI**	Defence Science and Technology, AU $60,000 AUD
Intelligent Multi-Agent Coordination and Learning 2018/08-2019/05 CI Mission: I am responsible for creating a learning which can control intelligent robots.	**Co-CI**	Defence Science and Technology, AU $126,000 AUD
How Fatigue Changes Autonomy Use 2017/10-2018/09 Co-CI Mission: I am responsible for designing the experiment of autonomous usage and analysing the level of fatigue through the recorded brain dynamics.	**Co-CI**	Lockheed Martin, USA $118,000 AUD
Image Analysis of Fire Trails with P300 2018/2-2018/5 CI Mission: I am responsible for developing one stable and reliable EEG algorithm for assisting human in verifying the fire trail.	**CI**	CommBank, AU $28,600 AUD
Brain-state drift detection and management for uncertainty estimation and human performance modeling (ACA-BSDD) 2016/5-2018/5 Co-CI Mission: I am responsible for developing and validating brain-state based on fuzzy clustering and collaborative learning for human-performance modeling.	**Co-CI**	US Army Research Lab / DCS Corp., USA $124,000 AUD
Adaptive robust closed-loop real-time BCI systems with minimum calibration (BCI-ARMC) 2016/5-2018/5 Co-CI Mission: I am responsible for developing online brain state change detection approaches to identify when a drift occurs and then to update the BCI model accordingly using minimum re-calibration.	**Co-CI**	US Army Research Lab / DCS Corp., USA $186,000 AUD
Mutually Adaptive & Closed-Loop Overall Performance Management System (BCI-maBCI) 2016/5-2018/5 Co-CI Mission: I am responsible for developing a mutually adaptive and closed-loop overall performance management system to rectify human behavioral lapses under the changing circumstances of the driver's state.	**Co-CI**	US Army Research Lab / DCS Corp., USA $192,000 AUD
Deep Learning for Human Action Analysis 2016/04-2017/03 CI Mission: I am responsible for developing new deep learning approaches for human action analytics.	**CI**	V5 Technology, Taiwan $206,000 AUD
Deep Learning for EEG-based Fatigue Assessment 2016/9-2017/10	Research Fellow	Brain Rhythm Inc. (BRI), Taiwan $210,000 AUD
Cognition and Neuroergonomics Collaborative Technology Alliance Program 2012/06-2015/07	Research Assistant	US Army Research Lab / DCS Corp., USA $4,221,270 AUD
Aiming for Top University Program-Brain Research Center 2009/11-2015/07	Research Assistant	Ministry of Education, Taiwan $2,554,509 AUD
Establishment of International NCTU-UCSD Center of Excellence for Advanced Bioengineering Research 2010/08-2015/07	Research Assistant	National Science Council, Taiwan $8,695,652 AUD

Graduate Students Study Abroad Program 2013/06-2014/04	**CI**	National Science Council, Taiwan $20,820 AUD

C. Positions and Honors

Positions and Employment

- **Senior Lecturer,** School of Computer Science, Faculty of Engineering and Information Technology, University of Technology Sydney — Jul. 2020 –
- **Lecturer,** School of Software, Faculty of Engineering and Information Technology, University of Technology Sydney — Dec. 2017 – Jul. 2020
- **Postdoctoral fellow**, Center of Artificial Intelligence, University of Technology Sydney — Dec. 2016 – Dec. 2017
- **Postdoctoral fellow**, Brain Research Center, National Chiao Tung University — Aug. 2016 – Dec. 2016
- **Second lieutenant**, Obligatory one-year Military Service, ROC Army, Taiwan — Aug. 2015 – Jul. 2016
- **Visiting doctoral scholar**, Swartz Center for Computational Neuroscience, University of California San Diego, USA — Jun. 2013 – Apr. 2014
- **Visiting doctoral scholar**, Human Research and Engineering Directorate, United States Army Research Laboratory (ARL), USA — Sep. 2013 – Dec. 2013
- **Lecturer**, Department of Management and Information, National Open University, Taipei, Taiwan — Feb. 2010 – Feb. 2013
- **Web Admin,** Brain Research Center, National Chiao Tung University, Taiwan — Sep. 2008 – Jun. 2013

Awards and Other Professional Activities:

- 2024 Best Reviewer Award in International Journal of Computational Intelligence System — Jun. 2025
- Best Presentation in The Australia & New Zealand Musculoskeletal (ANZMUSC) Clinical Trials Network — Oct. 2024
- 2021 Outstanding Researcher Award at Australia Artificial Intelligence Institute, UTS — Dec. 2021
- 2019 Outstanding Researcher Award at Centre for Artificial Intelligence, UTS — Dec. 2019
- NCTU award of outstanding student paper on journals — Jun. 2015
- Graduate Students Study Abroad Program - Swartz Center for Computational Neuroscience, UCSD — Nov. 2012
- Biomedical Engineering Forum Best Student Paper Award — Jul. 2010
- Biomedical Engineering Forum Best Student Paper Award — Jun. 2009

D. Teaching Experience

2018 Dec - now

As Lecturer/Senior Lecturer at UTS, I create and design this studio-based subject to encourage the students to have real experience in one industry-like environment.

1. Coordinator and lecturer of Introduction to Computational Intelligence to group of 54. One lecturing and one computer lab per week of total 2 hours (Autumn 2025)

   Student Feedback Survey: 4.32/5
2. Coordinator and lecturer of Software Innovation Studio to group of 152, final year B.S student. One workshop per week of total 3 hours (Spring 2024)

   Student Feedback Survey: 4.0/5
3. Coordinator and lecturer of Introduction to Computational Intelligence to group of 46. One lecturing and one computer lab per week of total 2 hours (Autumn 2024)

   Student Feedback Survey: 4.38/5

4. Coordinator and lecturer of Software Innovation Studio to group of 119, final year B.S student. One workshop per week of total 3 hours (Spring 2023)

   Student Feedback Survey: 4.1/5

5. Coordinator and lecturer of Introduction to Computational Intelligence (**New subject to Master degree*) to group of 22. One lecturing and one computer lab per week of total 2 hours (Autumn 2023)

   Student Feedback Survey: 4.25/5

6. Coordinator and lecturer of Software Innovation Studio (**New subject*) to group of 89, final year B.S student. One workshop per week of total 3 hours (Spring 2022)

   Student Feedback Survey: 4.52/5

7. Coordinator and lecturer of Introduction to Computational Intelligence (**New subject*) to group of 22. One lecturing and one computer lab per week of total 2 hours (Autumn 2022)

   Student Feedback Survey: 4.57/5

8. Lecturer of Software Engineering Studio 3A and 3B to group of 78, final year B.S. students. Two classes per week of total 4 hours (Spring 2021)

   Student Feedback Survey: 4.5

9. Lecturer of Software Engineering Studio 3A and 3B to group of 92, final year B.S. students. Two classes per week of total 4 hours (Autumn 2021)

   Student Feedback Survey: 4.4

10. Lecturer of Software Engineering Studio 3A and 3B to group of 53, final year B.S. students. Two classes per week of total 4 hours (Spring 2020)

    Student Feedback Survey: 4.1

11. Lecturer of Software Engineering Studio 3A to group of 38, final year B.S. students. One class per week of total 2 hours (Autumn 2020)

    Student Feedback Survey: 4.23

12. Lecturer of Software Engineering Studio 2A to group of 52, final year B.S. students. Two classes per week of total 4 hours (Autumn 2019)

    Student Feedback Survey: 4.18

13. Coordinator of Software Engineering Studio 1A/1B to group of 118, 2nd year B.S. students. Two classes per week of total 4 hours (Autumn 2019)

    Student Feedback Survey: 4.08

14. Lecturer of Software Engineering Studio 1B to group of 107, 2nd year B.S. students. Two classes per week of total 4 hours (Spring 2018)

    Student Feedback Survey: 4.21

15. Lecturer of Software Engineering Studio 1A to group of 119, 2nd year B.S. students. One class per week of total 4 hours (Autumn 2018)

    Student Feedback Survey: 4

2010 Feb - 2013 Feb As Lecturer at National Open University, Taipei, Taiwan

1. Lecturer of Internet and Safety course to group of 40-50, 2nd year B.S. students. One class per week of total 2 hours (Autumn 2010, Autumn 2011 and Autumn 2012)
2. Lecturer of Technology and Life course to group of 30-40, 1st year B.S. students. One class per week of total 2 hours (Spring 2010, Spring 2011, Spring 2012, and Spring 2013)
3. Lecturer of Digital Multimedia course to group of 20-30, 1st year B.S. students. One class per week of total 2 hours (Autumn 2012)

E. Selected Publications

Journal article (published)

Mark: *corresponding author

[1] W. Ma, Y. C. Chang, J. Yang, **Y. K. Wang** and C. T. Lin, "Contrastive Learning-Based Agent Modeling for Deep Reinforcement Learning," *IEEE Trans. on Emerging Topics in Computational Intelligence*, Vol. 9, no. 5, 2025

[2] J. Zhou, Y. Duan, Y. C. Chang, **Y. K. Wang** and C. T. Lin, "BELT: Bootstrapped EEG-to-Language Training by Natural Language Supervision," *IEEE Trans. on Neural Systems and Rehabilitation Engineering*, Vol. 32, 2024

[3] Z. Zhuang, **Y. K. Wang**, Y. C. Chang, J. Liu and C. T. Lin, "A Connectivity-Aware Graph Neural Network for Real-Time Drowsiness Classification," *IEEE Trans. on Neural Systems and Rehabilitation Engineering*, Vol. 32, 2024

[4] C. T. Lin, H. Zhang, L. Ou, Y. C. Chang, and **Y. K. Wang***, "Adaptive Trust Model for Multi-Agent Teaming Based on Reinforcement-Learning-Based Fusion," *IEEE Trans. on Emerging Topics in Computational Intelligence*, Vol. 8, no. 1, 2024

[5] L. Ou, Y. C. Chang, **Y. K. Wang** and C. T. Lin, "Fuzzy-Centered Explainable Network for Reinforcement Learning," *IEEE Trans. on Fuzzy Systems*, Vol. 32, no. 1, 2024

[6] A. Almohammadi and **Y. K. Wang***, "Revealing Brain Connectivity: Graph Embeddings for EEG Representation Learning and Comparative Analysis of Structural and Functional Connectivity," *Frontiers in neuroscience*, Vol. 17, 2023

[7] Y. Duan, Z. Wang, Y. Li, J. Tang, **Y. K. Wang** and C. T. Lin, "Cross Task Neural Architecture Search for EEG Signal Recognition," Neurocomputing, Vol. 545, 2023

[8] J. Zhou, Y. Duan, Y. Zou, Y. C. Chang, **Y. K. Wang** and C. T. Lin, "Speech2EEG: Leveraging Pretrained Speech Model for EEG Signal Recognition," *IEEE Trans. on Neural Systems and Rehabilitation Engineering*, Vol. 31, 2023

[9] S. Aldini, A. K. Singh, D. Leong, **Y. K. Wang**, M. G. Carmichael, D. Liu, C. T. Lin, "Detection and Estimation of Cognitive Conflict During Physical Human-Robot Collaboration," *IEEE Trans. on Cognitive and Developmental Systems*, Vol. 15, no. 2, 2023 (IF: 3.41; category: Rehabilitation; ranking: 6/64) (ERC Tier A*)

[10] C. T. Lin, J. Liu, C. N. Fang, S. Y. Hsiao, Y. C. Chang and **Y. K. Wang***, "Multi-stream 3D Convolution Neural Network with Parameter Sharing for Human State Estimation," *IEEE Trans. on Cognitive and Developmental Systems*, Vol. 15, no. 1, 2022

[11] C. T. Lin, H. Y. Fan, Y. C. Chang. L. Ou, J. Liu, **Y. K. Wang** and T. P. Jung, "Modelling the Trust Value for Human Agents Based on Real-Time Human States in Human-Autonomous Teaming Systems," Technologies, Vol. 10, no 115, 2022 (selected for journal cover)

[12] J. Fumanal-Idocin, Z. Takac, J. Fernandez, J. A. Sanz, H. Goyena, C. T. Lin, **Y. K. Wang** and H. Bustince, "Interval-valued aggregation functions based on Moderate deviations applied to Motor-Imagery-Based Brain Computer Interface," *IEEE Trans. on Fuzzy Systems*, Vol. 30, no. 7, pp. 2706-2720, 2022

[13] Dulan Perera, **Y. K. Wang**, C. T. Lin, H. Nguyen and Rifai Chai, "Improving EEG-based driver distraction

classification using brain connectivity estimators," Sensors, Vol. 22, no. 16, 2022
[14] P. A. D. S. N. Wijesekara and **Y. K. Wang**, "A Mathematical Epidemiological Model (SEQIJRDS) to Recommend Public Health Interventions Related to COVID-19 in Sri Lanka," *COVID*, Vol. 2, no. 6, pp. 793-826, 2022
[15] Y. Duan, Z. Wang, J. Wang, **Y. K. Wang** and C. T. Lin, "Position-Aware Image Captioning with Spatial Relation," Neurocomputing, Vol. 497, 2022
[16] J. T. King, A. K. John, **Y. K. Wang**, C. K. Shih, D. Zhang, K. C. Huang and C. T. Lin, "Brain Connectivity Changes during Bimanual and Rotated Motor Imagery," *IEEE Journal of Translational Engineering in Health & Medicine*, Vol. 10, 2022
[17] X. Wang, Tim Chen, **Y. K. Wang** and C. T. Lin, "Implicit Control of Robot using Error-related Potential-based Brain-Computer Interface," *IEEE Transactions on Cognitive and Developmental Systems*, Vol 15. No. 1, 2023
[18] C. T. Lin, Y. Tian, **Y. K. Wang**, T. T. Do, Y. L. Chang, J. T. King, K. C. Huang and L. D. Liao, "Effects of Multisensory Distractor Interference on Attentional Driving," *IEEE Trans. on Intelligent Transportation Systems*, vol. 23, no. 8, 10395-10403, 2022 (IF: 12. 2; category: Automotive Engineering; ranking: 3/95)
[19] J. Fumanal-Idocin, **Y. K. Wang**, C. T. Lin, J. Fernandez, J. A. Sanz and H. Bustince, "Motor-Imagery-Based Brain Computer Interface using Signal Derivation and Aggregation Functions," *IEEE Transactions on Cybernetics*, Vol. 52, no. 8, 2022
[20] Y. C. Chang, **Y. K. Wang**, N. R. Pal and C. T. Lin, "Exploring Covert States of Brain Dynamics via Fuzzy Inference Encoding," accepted by *IEEE Trans. on Neural Systems and Rehabilitation Engineering* (IF: 3.41; category: Rehabilitation; ranking: 6/64) (ERC Tier A*)
[21] J. Yang, **Y. K. Wang**, X. Yao and C. T. Lin, "Adaptive Initialization Method for K-means Algorithm," *Frontiers in Artificial Intelligence* 4:740817, 2021
[22] W. Ding, Y. Ming, **Y. K. Wang** and C. T. Lin, "Memory Augmented Convolutional Neural Network and Its Application in Bioimages," *Neurocomputing*, vol. 466, no. 27, 128-138, 2021
[23] Y. Ming, D. Wu, **Y. K. Wang**, Y. Shi and C. T. Lin, "EEG-Based Drowsiness Estimation for Driving Safety Using Deep Q-Learning," IEEE Transactions on Emerging Topics in Computational Intelligence, Vol. 5, no. 4, pp. 583-594, 2021
[24] C. T. Lin, J. T. King, A.R. John, K. C. Huang, Z. Cao and **Y. K. Wang***, "The impact of vigorous cycling exercise on visual attention: a study with the br8 wireless dry EEG system," *Frontiers in neuroscience*, Vol. 15, 70 (2021)
[25] M. Nascimben, **Y. K. Wang***, J. T. King, T. P. Jung, J. Touryan, B. J. Lance and C. T. Lin, "Alpha correlates of practice during mental preparation for motor imagery," *IEEE Transactions on Cognitive and Developmental Systems* vol. 14, no. 1, 146-155, 2020.
[26] C. T. Lin, C. H. Chung, Y. C. Hung, Chieh-Ning Fang, Dongrui Wu and **Y. K. Wang***, "A Driving Performance Forecasting System Based on Brain Dynamic State Analysis using 4D Convolutional Neural Networks," *IEEE Transactions on Cybernetics*, vol. 51, no. 10, 2168-2267, 2021.
[27] T. T. Do, **Y. K. Wang** and C. T. Lin, "Increase in brain effective connectivity in multitasking but not in a high-fatigue state," *IEEE Transactions on Cognitive and Developmental Systems*, vol. 13, no. 3, 566-574, 2020.
[28] A. K. Singh, **Y. K. Wang** and C. T. Lin, "Extended Interaction With a BCI Video Game Changes Resting-State Brain Activity," *IEEE Transactions on Cognitive and Developmental Systems*, vol. 12, no. 4, 809-823, 2020.
[29] Y. Ming, D. Pelusi, C. N. Fang, M. Prasad, **Y. K. Wang**, D. Wu, and C. T. Lin, "EEG Data Analysis with Stacked Differentiable Neural Computers," *Neural Computing and Applications*, vol. 32, no. 12, 7611-7621, 2020.
[30] Y. Ming, W. P. Ding, D. Pelusi, D. Wu, **Y. K. Wang**, M. Prasad, and C. T. Lin, "Subject adaptation network for EEG data analysis," *Applied Soft Computing*, vol. 84, 2019 (IF: 4.873; category: Software; ranking: 24/360)
[31] K. C. Huang, C. H. Chuang, **Y. K. Wang**, C. Y. Hsieh, J. T. King, and C. T. Lin, "The Effects of Different Fatigue Levels on Brain-Behavior Relationships in Driving," *Brain and Behavior*, 2019
[32] T. T. Do, C. H. Chuang, S. J. Hsiao, C. T. Lin and **Y. K. Wang***, "Neural Comodulation of Independent

Brain Processes Related to Multitasking," *IEEE Trans. on Neural Systems and Rehabilitation Engineering*, vol. 6, pp. 1160-1169, *2019* (IF: 3.41; category: Rehabilitation; ranking: 6/64) (ERC Tier A*)

[33] C. T. Lin, J. T. King, C. H. Chuang, W. P. Ding, W. Y. Chuang, L. D. Liao and **Y. K. Wang***, " Exploring the Brain Responses to Driving Fatigue Through Simultaneous EEG and FNIRS ", *International Journal of Neural Systems*, vol. 6, pp. 1160-1169, 2019 (IF: 6.085; category: Computer Science, Artificial Intelligence; ranking: 2/130) (ERC Tier A*)

[34] T. K. Reddy, V. Arora, S. Kumar, L. Behera, **Y. K. Wang**, and C. T. Lin, "Multi-class Fuzzy Time-delay Common Spatio-Spectral Patterns with Fuzzy Information Theoretic Optimization for EEG based Regression Problems in Brain Computer Interface (BCI)," *IEEE Trans. on Fuzzy Systems*, vol. 27, no. 10, pp. 1943-1951, 2019 (IF: 8.415; category: computer science; ranking: 1/130) (ERC Tier A*)

[35] L. W. Ko, Y. C. Lu, H. Bustince, Y. C. Chang, Y. Chang, **Y. K. Wang**, J. Sanz, G. P. Dimuro and C. T. Lin, "Multimodal Fuzzy Fusion for Enhancing the Motor-Imagery-based Brain Computer Interface," *IEEE Computational Intelligence Magazine*, vol. 14, no. 1, pp. 96-106, 2019

[36] T. K. Reddy, V. Arora, S. Kumar, L. Behera, **Y. K. Wang**, and C. T. Lin, "Electroencephalogram based reaction time prediction with Differential Phase Synchrony representations using co-operative multitask learning Deep Neural Networks," *IEEE Transactions on Emerging Topics in Computational Intelligence*, Vol. 3, no. 5, pp. 369-379, 2019

[37] Z. Cao, W. Ding, **Y. K. Wang**, F. Hussain, A. Jumaily and C. T. Lin, "Effects of Repetitive SSVEPs on EEG Complexity using Inherent Fuzzy Entropy," *Neurocomputing*, Vol. 389, pp. 198-206, 2019 (ERC Tier B)

[38] C. T. Lin, M. Nascimben, J. T. King, and **Y. K. Wang***, "Task-Related EEG and HRV Entropy Factors Under Different Fatigue Scenarios," *Neurocomputing*, vol. 311, pp. 24-31, 2018. (ERC Tier B)

[39] C. T. Lin, C. Y. Chiu, A. K. Singh, J. T. King, L. W. Ko, Y. C. Lu and **Y. K. Wang***, "A Wireless Multifunctional SSVEP-Based Brain Computer Interface Assistive System," *IEEE Transactions on Cognitive and Developmental Systems*, vol. 11, no. 3, pp375-383, 2018.

[40] C. H. Chung, Z. Cao, J. T. King, B. S. Wu, **Y. K. Wang** and C. T. Lin, "Brain Electrodynamic and Hemodynamic Signatures against Fatigue during Driving", *Frontiers in Human Neuroscience*, vol. 12, 2018

[41] **Y. K. Wang**, T. P. Jung, and C. T. Lin, "Theta and Alpha Oscillations in Attentional Interaction during Distracted Driving", *Frontiers in Behavioral Neuroscience*, vol. 12, 2018. (IF: 3.052; category: Behavioral Sciences; ranking: 6/51) (ERC Tier A)

[42] C. T. Lin, T. C. Chiu, **Y. K. Wang***, C. H. Chuang, and K. Gramann, "Granger Causal Connectivity Dissociates Navigation Networks that Subserve Allocentric and Egocentric Path Integration," *Brain Research*, vol. 1679, pp. 91-100, 2018. (ERC Tier B)

[43] C. T. Lin, T. Y. Hsieh, Y. T. Liu, Y. Y. Lin, C. N. Fang, **Y. K. Wang**, G. Yen, N. R. Pal, and C. H. Chuang, "Minority Oversampling in Kernel Adaptive Subspaces for Class Imbalanced Problems," *IEEE Transactions on Knowledge and Data Engineering*, vol. 30, no. 5, pp. 950-962, 2018. (ERC Tier A)

[44] C. T. Lin, C. S. Huang, W. Y. Yang, A. Singh, C. H. Chuang, and **Y. K. Wang**, "Real-Time EEG Signal Enhancement using Canonical Correlation Analysis and Gaussian Mixture Clustering," *Journal of Healthcare Engineering*, 2018.

[45] C. T. Lin, M. Prasad, C. H. Chung, D. Puthal, H. El-Sayed, S. Sankar, **Y. K. Wang**, J. Singh, and A. K. Sangaiah, "IoT-based Wireless Polysomnography Intelligent System for Sleep Monitoring," *IEEE Access*, vol. 6, pp. 405-414, 2018.

[46] Y. T. Liu, N. R. Pal, A. R. Marathe, **Y. K. Wang**, and C. T. Lin, "Fuzzy Decision-Making Fuser (FDMF) for Integrating Human-Machine Autonomous (HMA) Systems with Adaptive Evidence Sources," *Frontiers in Human Neuroscience*, 11:332, 2017 (IF: 3.209; category: Psychology; ranking: 17/77) (ERC Tier A)

[47] C. T. Lin, Y. T. Liu, S. L. Wu, Z. Cao, **Y. K. Wang**, C. S. Huang, J. T. King, S. A. Chen, S. W. Lu and C. H. Chuang, "EEG-Based Brain-Computer Interfaces: A Novel Neurotechnology and Computational Intelligence Method," *IEEE System, Man, and Cybernetics Magazine*, vol. 3, no. 4, pp. 16-26, 2017. (ERC Tier A)

[48] K. C. Huang, T. Y. Huang, C. H. Chuang, J. T. King, **Y. K. Wang**, C. T. Lin, and T. P. Jung, "An EEG-Based Fatigue Detection and Mitigation System", *International Journal of Neural Systems*, vol. 26, no. 4, 2016. (IF: 6.085; category: Computer Science, Artificial Intelligence; ranking: 2/130) (ERC Tier A*)

[49] **Y. K. Wang**, T. P. Jung, and C. T. Lin, "EEG-Based Attention Tracking during Distracted Driving", *IEEE Trans. on Neural Systems and Rehabilitation Engineering*, vol. 23, no. 6, pp. 1085-1094, 2015. (IF: 3.41; category: Rehabilitation; ranking: 6/64) (ERC Tier A*)

[50] **Y. K. Wang**, S. A. Chen, and C. T. Lin, "An EEG-Based Brain-Computer Interface for Dual Task Driving Detection", *NeuroComputing*, vol. 129, pp. 85-93, 2014. (IF: 2.005; category: Computer Science, Artificial Intelligence; ranking: 28/121) (ERC Tier B)

[51] C. T. Lin, C. H. Chuang, **Y. K. Wang**, S. F. Tsai, T. C. Chiu, and L. W. Ko, "Neurocognitive Characteristics of the Driver: A Review on Drowsiness, Distraction, Navigation, and Motion Sickness", *Journal of Neuroscience and Neuroengineering*, vol. 1, no. 1, pp. 61-81, 2012. (selected for journal cover)

Book chapter

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F. Service

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9. 2020 International Automatic Control Conference, Publicity Chair

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1. 2022-2023 UTS AI Showcase judge
2. 2023 UTS AI Hackathon judge
4. 2020-2023 UTS Software Showcase judge

F. Invited Talk
1. Beyond the Lab: Real-World Brain Computer Interface, iFuzzy 2025, Taiwan, 7 Nov 2025
2. How AI Re-shape Australia Research and Education, Macquarie University, 3 Nov 2025
3. Beyond the Lab: Real-World Brain Computer Interface, Mahidol University, Thailand, 28 Oct 2025
4. Beyond the Lab: A Longitudinal Framework in Human Performance Measurement under Circadian Fatigue, National Ying Ming Chiao Tung University, 9 July 2025
5. Wearable Sensing and Edge Al in Biosignal Engineering, National Cheng Kung University, 30 June 2025
6. Beyond the Lab: A Longitudinal Framework in Human Performance Measurement under Circadian Fatigue, Macquarie University, 3 June 2025
7. Brain Computer Interface meets AI, National Sun Yat-sen University University, Taiwan, 14 June 2024
8. Wearable Sensing and Edge AI for Human-Agent Interaction, Academia Sinica, Taiwan, 1 June 2024
9. BCI-based Human-Agent Interaction, Hon Hai Research Institute, Taiwan, 1 June 2024
10. Edge AI for Human Augmentation, National Taiwan University, Taiwan, 31 May 2024

11. Wearable Sensing and Healthcare and Human Augmentation, National Tsing Hua University, Taiwan, 30 May 2024
12. Wearable Sensing and Edge AI for Biosignal Engineering, National Yang Ming Chiao Tung University, Taiwan, 27 May 2024
13. Edge AI and Smart Wearable Sensing Technologies for Healthcare and Human Augmentation, Taipei Medical University, Taiwan, 27 March 2024
14. Edge AI and Smart Wearable Sensing Technologies for Human Augmentation, Keynote, International Conference in Advancements of Technology and Computing (ICATC) 2023, Sri Lanka, 15 December
15. Brain-computer Interface in VR/AR/Motion Simulator, Western Sydney University, Australia, 1 September 2023
16. AI-enable Multimodal Signal Processing, 2023 Auto UI conference, German, 9 June 2023
17. AI-enable Big Health Data Analysis, National Taichung University of Education, Taiwan, 14 February 2023
18. Introduction to Brain-Computer Interface, 2022 IEEE International Conference on Recent Advances in Systems Science and Engineering, Taiwan, 7 November 2022
19. Multimodal Motionsickness Detection, 2022 Auto UI conference, South Korea, 18 September 2022
20. AI for Biosignal Processing and Medicare Usage, Sydney Spine Institute, Australia, 15 June 2022
21. Big health data analysis for wearable devices, National Taiwan University, Taiwan, 20 January 2022