

## Zhi-Hao Wang

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### Education

- Ph.D. (Department of Electronic Engineering, National Kaohsiung University of Science and Technology)

### Area of Specialty

- Machine Learning
- IoT System
- Biomedical Signal Processing

### Academic Experience

- Assistant Professor (Southern Taiwan University of Science and Technology)

### Journal Papers

1. Z. -H. Wang, Y. -T. Li and F. -C. Wen, "A Novel In-Line Polymer Melt Viscosity Sensing System of Integrated Soft Sensor and Machine Learning," in IEEE Sensors Journal, vol. 23, no. 11, pp. 12181-12189, 1 June1, 2023, doi: 10.1109/JSEN.2023.3267682.
2. Z. -H. Wang, "A Novel Soft Sensor Approach of Polymer Process for Resin Monitoring Based on Melt Pressure Spectrum," in IEEE Sensors Journal, vol. 23, no. 15, pp. 17551-17558, 1 Aug.1, 2023, doi: 10.1109/JSEN.2023.3285106.
3. Z. -H. Wang, F. -C. Wen, Y. -T. Li and H. -H. Tsou, "A Novel Sensing Feature Extraction Based on Mold Temperature and Melt Pressure for Plastic Injection Molding Quality Assessment," in IEEE Sensors Journal, vol. 23, no. 7, pp. 7451-7459, 1 April1, 2023, doi: 10.1109/JSEN.2023.3247597.
4. H.-H. Tsou, C.-C. Huang, T.-W. Zhao and Z.-H. Wang, "Design and validation of sensor installation for online injection molding sidewall deformation monitoring", Measurement, vol. 205, Dec. 2022.
5. Tsou, Hao-Hsuan, Huang, Chung-Ching, Wang, Zhi-Hao and Zhao, Ting-Wei. "Feasibility assessment of injection molding online monitoring based on oil pressure/nozzle pressure/cavity pressure" International Polymer Processing, vol. 38, no. 3, 2023, pp. 375-386. <https://doi.org/10.1515/ipp-2022-4281>
6. Z. -H. Wang and Y. -C. Wu, "A Novel Rapid Assessment of Mental Stress by Using PPG Signals Based on Deep Learning," in IEEE Sensors Journal, 2022, doi: 10.1109/JSEN.2022.3208427.
7. Wang, ZH., Hsu, TH. & Horng, GJ. Performance Improvement of Electric Vehicle with Integrated Composite Power Systems and Power Estimation. Wireless Pers Commun (2022). <https://doi.org/10.1007/s11277-022-09983-6>
8. T.-H. Hsu, Z.-H. Wang, and A. R. See, "A Cloud-Edge-Smart IoT Architecture for Speeding Up the Deployment of Neural Network Models with Transfer Learning Techniques," Electronics, vol. 11, no. 14, p. 2255, Jul. 2022, doi: 10.3390/electronics11142255.
9. H. Hendrick, R. Hidayat, G. -J. Horng and Z. -H. Wang, "Non-Invasive Method for Tuberculosis Exhaled Breath Classification Using Electronic Nose," in IEEE Sensors Journal, vol. 21, no. 9, pp. 11184-11191, 1 May1, 2021, doi: 10.1109/JSEN.2021.3061616.
10. Zhi-Hao Wang, Gwo-Jiun Horng, Hendrick and Gwo-Jia Jong, " A vehicle safety monitoring system based on the Internet of things and the identification of physiological characteristics," in Computers & Electrical Engineering, vol. 89, 2021, doi:

<https://doi.org/10.1016/j.compeleceng.2020.106946>.

11. Aripriharta, W. Z. Hao, Muladi, G. -J. Horng and G. -J. Jong, "A New Bio-Inspired for Cooperative Data Transmission of IoT," in *IEEE Access*, vol. 8, pp. 161884-161893, 2020, doi: 10.1109/ACCESS.2020.3021507.
12. Z. Wang, G. Horng, T. Hsu, C. Chen and G. Jong, "A Novel Facial Thermal Feature Extraction Method for Non-Contact Healthcare System," in *IEEE Access*, vol. 8, pp. 86545-86553, 2020, doi: 10.1109/ACCESS.2020.2992908.
13. C. Lin, Z. Wang\* and G. Jong, "A De-Identification Face Recognition Using Extracted Thermal Features Based on Deep Learning," in *IEEE Sensors Journal*, vol. 20, no. 16, pp. 9510-9517, 15 Aug.15, 2020, doi: 10.1109/JSEN.2020.2986098.
14. G. Jong, Z. Wang, Hendrick, K. Hsieh and G. Horng, "A Novel Adaptive Optimization of Intragrated Network Topology and Transmission Path for IoT System," in *IEEE Sensors Journal*, vol. 19, no. 15, pp. 6452-6459, 1 Aug.1, 2019, doi: 10.1109/JSEN.2019.2908702.
15. G. Jong, Hendrick, Z. Wang, K. Hsieh and G. Horng, "A Novel Feature Extraction Method an Electronic Nose for Aroma Classification," in *IEEE Sensors Journal*, vol. 19, no. 22, pp. 10796-10803, 15 Nov.15, 2019, doi: 10.1109/JSEN.2019.2929239.
16. Wang, Zhi-Hao, et al. "A Prediction Method for Voltage and Lifetime of Lead–Acid Battery by Using Machine Learning." *Energy Exploration & Exploitation*, vol. 38, no. 1, Jan. 2020, pp. 310–329, doi:10.1177/0144598719881223.
17. Z. Wang, G. Horng, T. Hsu, et al. Heart sound signal recovery based on time series signal prediction using a recurrent neural network in the long short-term memory model. *J Supercomput* (2019). <https://doi.org/10.1007/s11227-019-03096-x>
18. H. Lin, C. Jung, T. Huang, Hendrick, and Z. Wang, "NB-IoT Application on Decision Support System of Building Information Management," in *Wireless Personal Communications*, 27 Apr 2020. <https://doi.org/10.1007/s11277-020-07389-w>
19. C. Lin, Z. Wang\*, G. Jong, "A research on relevance between photoplethysmography signal and perceptual stimulation", in *International Journal of Modern Physics B*, DOI: 10.1142/S0217979220401293 (Accepted, 1 May 2020)

### Conference Papers

1. T. -M. Wang, Z. -H. Wang, P. -J. Cheng, W. -C. Hsieh, C. -H. Kuo and G. -J. Jong, "A Research on Relevance Between Photoplethysmography Signal and External Stimuli," 2020 IEEE 2nd Eurasia Conference on Biomedical Engineering, Healthcare and Sustainability (ECBIOS), Tainan, Taiwan, 2020, pp. 204-207. doi: 10.1109/ECBIOS50299.2020.9203591.
2. H. Hendrick, W. Zhi-Hao, C. Hsien-I, C. Pei-Lun and J. Gwo-Jia, "IOS Mobile APP for Tuberculosis Detection Based on Chest X-Ray Image," 2019 2nd International Conference on Applied Information Technology and Innovation (ICAITI), Denpasar, Bali, Indonesia, 2019, pp. 122-125. doi: 10.1109/ICAITI48442.2019.8982152
3. Z. Wang, Y. Kung, Hendrick, P. Cheng, C. Wang and G. Jong, "Enhance Wireless Security System Using Butterfly Network Coding Algorithm," 2018 International Conference on Applied Information Technology and Innovation (ICAITI), Padang, Indonesia, 2018, pp. 135-138. doi: 10.1109/ICAITI.2018.8686731
4. Z. Wang, W. Hsieh, H. Hendrick, Y. Kung, C. Wang and G. Jong, "Capturing Physiological Signal by Using Micro Biomedical Device," 2018 International Conference on Applied Engineering (ICAE), Batam, 2018, pp. 1-5. doi: 10.1109/INCAE.2018.8579382
5. Z. Wang, Hendrick, C. Wang and G. Jong, "Vehicle Safety Monitoring System Based on Internet of Things and Identification with Physiological Characteristics," 2018 1st IEEE International Conference on Knowledge Innovation and Invention (ICKII), Jeju, 2018, pp. 124-127. doi: 10.1109/ICKII.2018.8569181
6. Hendrick, Z. Wang, C. Wang and G. Jong, "Feature Extraction of the VSD Heart Disease based on Audicor Device Measurement," 2018 1st IEEE International Conference on Knowledge Innovation and Invention (ICKII), Jeju, 2018, pp. 138-141. doi: 10.1109/ICKII.2018.8569053

7. Y. Kung, S. Liou, G. Qiu, B. Zu, Z. Wang and G. Jong, "Home monitoring system based internet of things," 2018 IEEE International Conference on Applied System Invention (ICASI), Chiba, 2018, pp. 325-327. doi: 10.1109/ICASI.2018.8394599
8. W. Zhi-Hao, D. Kurniadi, K. Yu-Fan, Hendrick, J. Gwo-Jia and H. Gwo-Jiun, "Wireless network home health care system of social welfare institution," 2017 5th International Conference on Electrical, Electronics and Information Engineering (ICEEIE), Malang, 2017, pp. 146-151. doi: 10.1109/ICEEIE.2017.8328779
9. W. Zhi-Hao, Hendrick, K. Yu-Fan, C. Chuan-Te, L. Shi-Hao and J. Gwo-Jia, "Controlling DC motor using eye blink signals based on LabVIEW," 2017 5th International Conference on Electrical, Electronics and Information Engineering (ICEEIE), Malang, 2017, pp. 61-65. doi: 10.1109/ICEEIE.2017.8328763
10. W. Zhi-Hao, L. Siou-Wei, C. Yaw-Jong, H. Shih-Hsien, L. Yen-Cheng and J. Gwo-Jia, "Study on vehicle safety image system optimization," 2017 5th International Conference on Electrical, Electronics and Information Engineering (ICEEIE), Malang, 2017, pp. 96-101. doi: 10.1109/ICEEIE.2017.8328770
11. W. Zhi-hao, K. Yu-Fan, C. Yu-Yan, Hendrick, Aripriharta and J. Gwo-Jia, "Mobile device combine the study of image track and surveillance monitor system," 2017 5th International Conference on Electrical, Electronics and Information Engineering (ICEEIE), Malang, 2017, pp. 83-87. doi: 10.1109/ICEEIE.2017.8328767
12. Hendrick, Jyun-Teng Jheng, Chen-Chai Tsai, Jia-Wei Liou, Zhi-Hao Wang, Gwo-Jia Jong, "Wisdom Appliance Control System," 2017 IOP Conf. Ser.: Earth Environ. Sci., vol. 73, p. 012027. doi :10.1088/1755-1315/73/1/012027
13. Hendrick, Chen-Chai Tsai, Jyun-Teng Jheng, Zhi-Hao Wang, Gwo-Jia Jong, "Complex Power System for Lithium Batteries and Lead-Acid Batteries," MATEC Web Conf., vol. 95, p. 03002, 2017. DOI: 10.1051/mateconf/20179503002

#### Dissertation

- Zhi-Hao Wang (2020) "The Bio-IoT System of Integrated Adaptive Transmission and PPG Signal Feature Analysis," Ph.D. Dissertation, National Kaohsiung University of Science and Technology.

#### Professional Certifications

1. ISO 14064-1, ITRI-202303018060
2. 電動車機電整合工程師，中級，A-E21-0014-2019

#### Professional Experience

1. Electrical Consultant, Hun Gin Machinery Co.,Ltd., 2018/01 ~ 2021/07
2. Chief System Engineer, ChenFonWei Security Co.,Ltd., 2016/06 ~ 2021/07

#### Grants

1. 112年度大專校院教學實踐研究計畫-以STEM教學模式引導學生設計智慧製造管理系統之教學與產業實務研究-以心導管押出製程為例
2. 海洋委員會，使用人工智慧開發箱網養殖之水產養殖自動化IoT系統(OAC-NKUST-108-002)，計畫主持人

#### Patents

1. PNEUMONIA REMOTE DETECTION SYSTEM AND METHOD THEREOF, LICENSE ID: I812135, 2023/08/11
2. FACIAL-IMAGE IDENTIFICATION SYSTEM AND METHOD THEREOF, LICENSE ID: I755907, 2022/02/21
3. OZONE STERILIZATION WATER SUPPLY SYSTEM AND METHOD THEREOF, LICENSE ID: I638783, 2018/10/21

