**Special Session of ICACI2023**

**Open-set Learning and Diagnostics**

**Session Organizers:**

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**Session Description:**

Machine-learned recognition/diagnosis models have shown promise in every application. Traditional supervised learning aims to train a classifier in the closed-set world, where training and test samples share the same label space. However, in a real-world application, it is very difficult to classify accurately where it needs to deal with unknown classes. A more realistic scenario is open-set classification or open-set recognition. This requires the classifiers to not only accurately classify the known classes but also effectively deal with unknown ones that were not anticipated during the training phase. This special session is organized to focus on the recent development of open-set learning and diagnostics.

**Potential topics include but are not limited to the following:**

■ Open-set fault diagnosis approach for machinery components

■ Intelligent fault diagnosis based on deep/transfer learning and big data

■ Open-set medical diagnosis

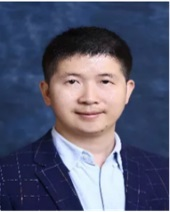
■ Intelligent fault diagnosis models and algorithms (e.g., imbalanced learning, few-shot learning, positive-unlabeled (PU) learning, zero-shot learning, and modeling methods under various operating conditions).

■ Other advances in fault diagnosis/prognosis and life prediction based on deep learning algorithms

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and M.E. degree in safety engineering and mechanical engineering from Gansu University of Technology, Lanzhou, in 1992 and 2001, respectively, and the Ph.D. degree in mechanical engineering from Zhejiang University, Hangzhou, in 2004. Since 2013, he serves as a Professor with the School of Engineering, Zhejiang Normal University, Jinhua. His research interests include smart test and signal processing, mechanical dynamics, condition monitoring, and fault diagnosis of mechanical equipment.

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