Zeng-Guang Hou

Biography

Zeng-Guang Hou is professor at the Institute of Automation, Chinese Academy of Sciences (CAS), Beijing. He is also a Key PI of the Center for Excellence in Brain Science and Intelligence Technology (CEBSIT) of Chinese Academy of Sciences (CAS). Dr. Hou's research interests include computational intelligence, robotics and intelligent systems.

He is a Fellow of IEEE and CAA. He is serving as a VP of the Asia Pacific Neural Network Society (APNNS) and Chinese Association of Automation (CAA). Dr. Hou is an associate editor of *IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cybernetics,* and *Neural Networks, etc*. He was on the Board of Governors of International Neural Network Society (INNS). He was the Chair of Neural Network Technical Committee (NNTC) of Computational Intelligence Society (CIS), IEEE. Dr. Hou was a recipient of IEEE Transactions on Neural Networks Outstanding Paper Award in 2013, and the Outstanding Achievement Award of APNNS in 2017, the Dennis Gabor Award of INNS in 2022, and Neural Networks Best Paper Award in 2022. He has over 30 patents on medical devices. He was awarded the Gold Medal of the International Exhibition of Inventions of Geneva 2021 for rehabilitation robots.

Title: Human-Machine Interaction: Methods and Challenges for Rehabilitation Robots

Abstract: We are facing the increasingly serious population aging issues and the challenges of assessment, diagnosis, intervention and rehabilitation caused by the high incidence of stroke and Alzheimer's disease, as well as the shortage of equipments and therapists. Rehabilitation robots are expected to provide technical solutions and efficient therapy to patients, and affordable services to families, but the promotion and application of rehabilitation robots also face many challenges. For example, efficient, reliable and safe intelligent interaction and intelligent control are difficulties hindering the development and applications. Focusing on the acquisition and processing of multimodal biological signals, brain-computer interface, intervention control and rehabilitation, this talk explores the opportunities in related fields, as well as perspectives on the rehabilitation robots in the future.