Department of Biomedical Engineering

Research Student Seminar Series

(Supervised by Prof. King LAI)

Wrist Motion Classification Using Flexible sEMG Sensors in Different Feature Conditions Based on Machine Learning

Ms. Jiaqi Xue
Ph.D. candidate

Date:	November 29, 2023
Time:	2:15pm-2:30pm
Venue:	B6619 Conference Room, 6/F, Blue Zone, Yeung Kin Man Academic Building

Abstract

Electromyography (EMG) is a bioelectrical signal to reflect human intention before actual motion occurs. EMG has been widely used in human-machine interaction such as robot control, rehabilitation and health monitoring. In this work, we have designed an intelligent approach for wrist motion classification based on EMG signals. Since commercial electrodes cannot maintain good contact with skin during deformation, we have utilized a new type of fabricated flexible electrodes. With these electrodes, high-quality signals can be acquired. And the machine learning methods have been utilized to classify the extracted feature

sets. Four different feature conditions have been compared. In the condition of six EMG features, we have identified four wrist gestures including wrist flexion, extension, radial deviation, and ulnar deviation with the best accuracy of 92.26%.

Biography

Jiaqi Xue is now pursuing a Ph.D. degree in Dr. King Lai's group with the Department of Biomedical Engineering, City University of Hong Kong. Her research interests include EMG signal processing and AI-based analysis.

All are Welcome!

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