

MUSICROBOT®

Harmonious Integration Technology of Humans and Robots in the Field of Music

The Interactive Robotic Percussion Systems (IROPS) comprise percussion-playing robots and performance support devices. IROPS, with the use of sticks or mallets that they swing and strike, they play various percussion instruments, such as drums, Latin percussion, and marimbas. The highest sound-quality live performances are achieved through digital-to-analog conversion technology that does not compromise the musicality (Patent No. 6573355). The sound produced by real percussion instruments has a natural and gentle resonance and is quite different from electronically generated sound. Because device comprising IROPS is compatible with Bluetooth Musical Instrument Digital Interface (MIDI), it can be wirelessly connected to other devices, including smartphones and tablets, or to general MIDI equipment, and its use depends on user's requirements.

IROPS can be used in elementary schools or special needs schools for accompaniment or to model performance. In the form of a Teacher2, it can help alleviate staff shortages and assist teachers. Through the use of the setup to assist with the percussion part, ensemble performances can be supported.

We are developing performance support devices using sensing technology for children who find it difficult to play percussion instruments, with the intention of developing remote percussion playing. A range of performance support devices that respond to eye movements (eye trackers) or small finger movements provide the opportunity to enjoy percussion performance, regardless of any disability. IROPS can be used in a range of situations in school education to foster engagement. Moreover, it can be used in music activities and as part of lifelong learning for a wide range of ages from children to the elderly.

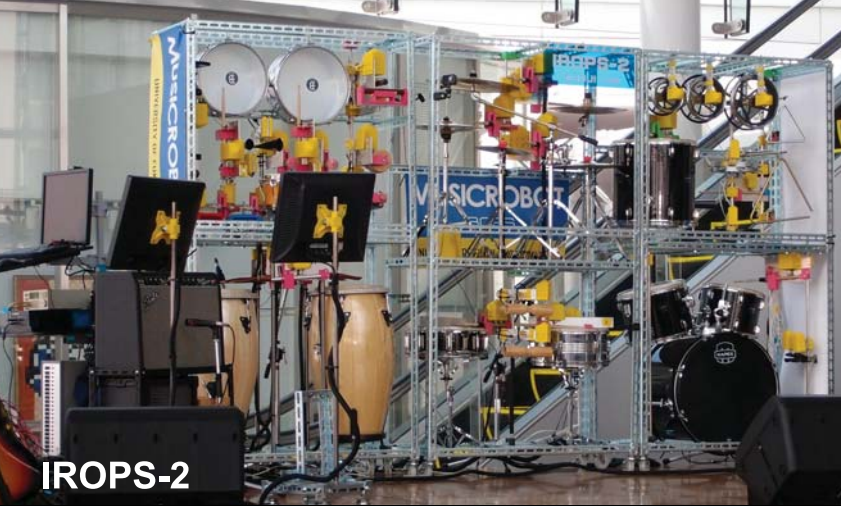
MUSICROBOT is a collaboration unit aiming at increasing cooperation between humans and robots in music. This is done through automatic musical performances by robots as well as humans. We explore new possibilities of musical expression to act in harmony with its presence.



University of Fukui

Advanced Materials Innovation & MonoZukuri Lab

<https://monozukuri.his.u-fukui.ac.jp/monozukurilab>



IROPS-2



IROPS-3



IROPS-4



IROPS-5



IROPS-6



IROPS-7



IROPS-8



IROPS-9