

4<sup>th</sup> International Conference on

# Sports Medicine and Fitness

November 14-15, 2018 | Edinburgh, Scotland

## A new machine for evaluating the precision and response time of punches

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Response time and precision of punches are an important skill for boxers, because the high precision and the fast moving response refer to an excellent skill. Our team developed the boxing trainer device that was called “Robo-Boxing Trainer”. The objective is to develop and evaluate the device for measuring precision (in percent) and response time (in seconds) of punches. Researchers cooperated with Sport Authority of Thailand and the Amateur Boxing Association of Thailand for development. Robo-Boxing Trainer consisted of four targets. Each punching target has eight sensors and eight LED lights. Operating software, which created by PLC-CX programmer and DOPSoft (delta), can set the punching series and alarm signals. It could record the response time since starting signal until touching target and to calculate for precision percentage. This software could be set and recorded maximal 40 series and maximal 100 punches in each punching series. Researchers compared the accuracy of counting time with digital oscilloscope and tested the efficiency of sensors’ cutting signal. This study found the counting time to be high accuracy (100% and 98.8%). The cutting sensors’ signal test was efficient. Robo-Boxing Trainer, which is a high accuracy device, might help to test and improve boxer’s skills.

### Biography

Tossaphon Jaysrichai has completed his PhD in Biomedical Engineering at Chulalongkorn University. He is a Lecturer of Physical Therapy.

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