Control development using fuzzy logic for a Biofeedback System.

Background

This project is done in collaboration with the German Heart Center and Sony. The goal of the project is to research and develop systems that help children with heart disorders to recover physical fitness after having an operative treatment. The system uses electronic games to help motivate the children to perform exercise. Playing games will cause the children to perform moves that are supporting the rehabilitation process. The patients physical engagement is measured by biomedical sensors and used for controlling the intensity and frequency of moves that are stressed by playing the game.

Description

The objective of this project is to develop the intelligence behind the biofeedback system. A controller is to be designed which should monitor the user's vital signals and with different mechanisms make the user reach a specific level of physical activity. Fuzzy logic will be used as a control mechanism where different rules will define the interaction between the game and the user.

Programming skills are required, experience with Qt is advisable.

This project is to be developed at the Experimental Heart Surgery Lab of the German Heart Center. (Lazarettstr. 62)

References

- German Heart Center: http://www.dhm.mhn.de/