UNIVERSITY OF GENOA
DEPARTMENT OF INFORMATICS, BIOENGINEERING, ROBOTICS AND SYSTEMS ENGINEERING
MASTER'S PROGRAM IN BIOENGINEERING

Thesis Project Form

Title (tentative): Affective synchronization during a social interaction

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Description

Motivation and application domain

Previous studies demonstrated that during social interactions the positive/negative mood expressed by an agent influence the motor behavior of a receiver. An interesting issue is to study this effect during a social game involving two players. Therefore, this project aims to identify a possible affective synchronization between the two players by using biomechanical and physiological measures.

General objectives and main activities

The main objective of the research is to study how the affective states (positive or negative) of one player may influence the motor performance of the other one. For this purpose, the project will leverage on a dyadic robotic platform (characterized by two planar manipulandum and globally named Braccio di Ferro 2) allowing two players to interact physically each other.
The first step of the project will consist in the implementation of the experimental setup allowing each participant to control the corresponding manipulandum.
The second step will consist on the development of a game in which the two players will be involved.
The third step will be to integrate physiological measurements in the experiment (i.e. from heart-rate sensors).
The final step will be on collecting and interpreting pilot data on healthy participants.

Training Objectives (technical/analytical tools, experimental methodologies)

The candidate will learn how to program a physical robot using real time toolboxes and MATLAB/Simulink. He/she will learn how to implement a game with a simple virtual reality engine. Moreover, the candidate will learn how to design an experiment and how to analyze and interpret the data recorded by the robot and by the physiological sensors.

Place(s) where the thesis work will be carried out: IIT - Contact unit

Additional information

Maximum number of students: 1