BSc/MSc-project

Title: Hybrid Brain Computer Interface Systems for Drone control in 3D

Description:

By presenting visual stimuli, evoked brain signals (VEPs (visual evoked potentials)) can be recorded from an individual by placing just a few electrodes on his/her scalp. From these signals, commands can be extracted for (example) controlling a wheelchair (2D). This would make it possible for a paralyzed person to control his/her own wheelchair in 4 different directions with the use of only the brain signals. There is no reason to believe that this method cannot be extended to a drone (3D). The aim of this project will be to design the signal acquisition, feature extraction, and classification parts of this BCI system. The interface to the drone is done in collaboration with DTU Space.

Goals: The successful completion of this project should lead to:

1. A publication of an article describing the work.
2. Bridging with DTU Space
3. A product, that can be displayed on a fair such as open house (Åbent Hus) at DTU and/or KU

Prerequisites: Experience with programming in MATLAB and a basic understanding of EEG and signal processing are necessities.

Responsible institution: DTU Elektro

Contact information:
1. Dr. Sadasivan Puthusserypady (Sada), Tel. +45 4525 3652, *e-mail*: spu@elektro.dtu.dk;
2. Dr. Jakob Jakobsen (Jakob), Tel. +45 4525 9778, *e-mail*: jj@space.dtu.dk
3. John Paulin Hansen, Tel. +45 4046 9626, e-*mail*: jpha@dtu.dk

Allowed no of students per project: 1-2

The project description may be published on the website (yes/no): Yes

Brain signals   Computer   Application

DTU Space
Institut for Rumforskning og -teknologi

DTU Electrical Engineering
Department of Electrical Engineering

DTU Management Engineering
Department of Management Engineering