סמינריון

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ד' 09.02.21 (ח אדר א, תשפ"ב), בשעה 13:30 באמצעות הזום : https://technion.zoom.us/j/98437686208

מרצה : איגור דמצ'נקו

מנחים : פרופ' מרים זקסנהויז

על הנושא:

EEG Correlates of errors, disturbances and rare target stimuli, and their applications for brain-computer interfaces

The seminar will be given in Hebrew

תקציר ההרצאה :

Brain computer interfaces (BCIs) provide direct communication link between the brain and the external world. A widely used technique for measuring brain activity is electroencephalogram (EEG). EEG measurements from a number of electrodes (here 35) over time (here 900 msec) can be represented as 3-dimensional (3-d) images and analyzed using 3-d image processing techniques. In particular convolutional neural networks (CNN) can be trained to classify spatial-temporal EEG patterns .

We developed 3-d CNNs for EEG classification to: (1) detect the desired action, i.e., determine whether the user wants to close or open left\right hand or maintain the hand posture, (2) detect error related potentials, which indicate that the executed movement is erroneous. The latter is very important since BCIs are prone to inaccuracies. Detected errors can be corrected to improve overall accuracy. My experiments demonstrate that error related potentials improve the accuracy of CNN-based BCI of hand control by more than 7% .

בברכה,

שפופ"ת מתי סאס

מרכז הסמינרים