# CE889-SU Neural Networks and Deep Learning

Summer Term 2021

There is one assignment, by which you are expected to demonstrate the understanding of knowledge learnt from the module and the practice of machine learning models applied to a realistic classification problem. The assignment will be counted for 20% of the final mark of the module. The remaining 80% is based on the exam.

## *1. Objectives*

- Understanding the knowledge of neural networks and diverse models
- Being able to program to achieve models for a tailored context
- Being able to apply neural network models (including deep learning models) to a required application

## *2. Requirements*

- Making the codes of Logistic model for the mental workload classification
- Selecting a deep learning model for the mental workload classification (Publicly available packages/toolboxes can be used. It is very encouraged to adapt the existing deep learning models for the purposes of performance improvement.)

## *3. Submission Files and Submission Deadline*

*Files:*

Report and Codes

*Date:*

See the date shown on the submission system (Faser)

4. ***Contents should be presented in the report*** (No more than 10 pages for the whole report)
    - Cover Page (Personal Information: Name, ID, Date etc.)
    - Main Body
        - Abstract (a summary of your report)
        - Backgrounds (introduce relevant works, such as previous studies/papers/state-of-the-art relevant methods etc.)
        - Methods (a description of the methods)
        - Results (classification accuracies, accuracy comparison etc.)
        - Conclusions (a short summary of your results/findings)
    - Reflections (no more than a half page)
    - References (papers, online webpages, books etc.)

***5. Dataset***

The data will be provided during the lab sessions. A detailed introduction will also be given in the lab sessions

***6. Target***

- Obtaining classification accuracy using Logistic model
- Obtaining classification accuracy using a deep learning model (selected by yourself)
- Comparing the performance (accuracies) between models to understand the parameter tuning of deep learning models and how performance varies over different setting.