**Course Projects. Machine Learning and Pattern Recognition Your Course Project:**

Your class project is an opportunity for you to explore an interesting machine learning and pattern recognition problem of your choice in the context of a real-world data set. Projects must be done as an individual. Instructors and TAs will consult with you on your ideas, but of course the final responsibility to define and execute an interesting piece of work is yours. Your project will be worth 30% of your final class grade, and will have 4 deliverables:

1. **Proposal**:1 page (10%) due week three
2. **Midway Report:**1-2 pages (10%) week 5
3. **Final Report**: 5-6 pages (80%) week 9
4. **Presentation week 10 : later decide**

**Project Proposal:**

Project proposal format: student name +Proposals should be one page maximum. ()

**Midway Report:**

Read the list of available data sets and potential project ideas below. You have to use one of these data sets, because we know that they have been successfully used for machine learning in the past.

Include the following information:

* Project title
* Data set
* Project idea. This should be approximately two paragraphs.
* Software you will need to write.
* Papers to read. Include 1-3 relevant papers. You will probably want to read at least one of them before submitting your midway report

**Final Report:**

Your final report is expected to be a 5-6 pages report (IEEE). It should roughly have the following format:

* Introduction - Motivation
* Problem definition
* Proposed method
  + Intuition - why should it be better than the state of the art?
  + Description of its algorithms
* Experiments o Description of your testbed; list of questions your experiments are designed to answer
  + Details of the experiments; observations
* Conclusions

Grading scheme for the project report:

* 10% for proposed method (should be done week 3)
* 10%Problem definition and dataset
* 50%The model architecture ( model approaches in details , steps framework ,how you will validate the results )
* 25% for the design of experiments ( charts and tables )
* 5% for plan of activities (in an appendix, please show the old one and the revised one, along with the activities of each group member )