

## Guidelines

Please use the template posted on Canvas. Every team member needs to submit the proposal.

- 🚩 Project proposal (1 page) due on **2/22/18** at **11:59pm** (submission on Canvas)
  - Project title
  - Team members: role of each member
  - Preliminary plan (milestones)
  - Paper list
  - **Topic and plan must be approved by instructor**
  - **Should go beyond implementation of existing machine learning algorithms**
  - **Novel research ideas regarding machine learning models and algorithms are welcome**
  - **Could be adaptation of an existing algorithm to specific applications**
  - **Analysis and insights regarding machine learning models make a big difference**
- 🚩 Final project report (10-15 pages) due on **4/26/18** at **11:59pm** (submission on Canvas)
  - Introduction: a summary of the problem, previous work, methods, and results
  - Problem description: a detailed description of the problem you try to address
  - Methodology: a detailed description of methods used
  - Results: a detailed description of your observations from the experiments
  - Conclusions and future work: a brief summary of the main contributions of the project and the lessons you learn from the project, as well as a list of some potential future work
- 🚩 Group presentation on **4/26/18**
  - Details will be provided later

## Data Sets

- KDD Cup 2016: <https://kddcup2016.azurewebsites.net/>
- KDD Cup 2015: <http://kddcup2015.com/information.html>
- ICDM Competition 2015: <https://www.kaggle.com/c/icdm-2015-drawbridge-cross-device-connections>
- Kaggle: <https://www.kaggle.com/competitions>
- UCI machine learning repository: <http://archive.ics.uci.edu/ml/>
- Data sets from your own research

## Sample Project Topics

- Exploring Machine Learning Techniques for Plankton Classification
- Multi-View Learning for Quantifying Impact of CQA Posts
- Multi-class Text Classification of Diabetes Forum Data
- Are LEED Buildings Saving Energy?
- CPU Load Prediction Using Gaussian Process
- A Comparative Study and Implementation on Text Classification Algorithms
- Sentiment Analysis on Movie Reviews
- Amazon Product Recommendation Using Collaborative Filtering and Natural Language Processing
- Using Different Machine Learning Techniques to Classify EEG brain signals for purpose of authentication
- Driver Telematics Analysis
- Bulls Eye Predicting the Stock
- Speech De-reverberation Using Deep Auto-encoder
- Malware Classification
- Stock Market Prediction Using Hybrid Machine Learning Algorithms
- Malware Classification based on File Content and Characteristics
- Analyzing Effect of Dimensionality Reduction and Choice of Attribute-classifier on Attribute Transfer Learning
- Representation Learning and Clustering from Music Audio with Deep Learning
- Face Recognition based on Dimensionality Reduction Techniques
- Comparison of Object Detection Algorithms
- A Statistical Machine Learning Model to Predict Forest Fires based on Meteorological Data
- Predicting User Reviews and Measuring User Similarity from User Reviews Dataset
- Diabetic Retinopathy Detection