

# Artificial Neural Networks

Projects requirements

# Project

As a part of the assigned work for this course, you are required to complete a project of your own choosing that is based on the material of this course.

The premise of the project must be closely related to some aspect of the material but may explore an avenue that was left unaddressed in class.

**Deadline for the project submission will be announced later**

# Project type and policies

There are various types of projects you can consider:

The project may be very practical in terms of applying techniques you have learned in the course to a real problem such as classification of email messages.

The project may involve designing or adapting existing algorithms to a novel class of problems. For example, how might we solve multiple related classification tasks? How can we improve document clustering by designing a new clustering metric?

The project may consist of a theoretical analysis of a method we have discussed. For example, this may be in terms of complexity, convergence, etc.

The project can be a theoretical or more applied survey of a branch of machine learning that we didn't go through in detail. For example, you may write about the use of machine learning in natural language processing or review sample complexity of machine learning algorithms.

The project can be related to your research area (if you have one). You also should not submit a project that is largely a collaborative effort with people outside the course. For example, if your research involves other people in a larger project, you could propose to address a slightly different question (still related to your research) but one that you are pursuing alone or in collaboration with other students taking the course.

For the inspiration for the project scope you can have a look at the projects presented at <https://harvard-iacs.github.io/2018-CS109A/pages/projects.html>

# Project size and the final report

The project, however, should be in some sense “complete”. By this we mean that you should not ignore relevant machine learning issues.

In the final report you shouldn't just say what you did but also why it was a reasonable thing to do given the course material.

The final report should include at most four (4) pages of text (12pt font, single spaced) per person (not including figures).

***You shouldn't worry about getting great results.*** The idea and your understanding of the machine learning issues involved are much more important than getting “great” results.

# Examples of data Repositories

Database	link
UCI ML Repository (Various)	<a href="http://archive.ics.uci.edu/ml/">http://archive.ics.uci.edu/ml/</a>
UCI KDD Repository (Various)	<a href="http://kdd.ics.uci.edu/">http://kdd.ics.uci.edu/</a>
Protein data bank	<a href="http://www.rcsb.org/pdb/home/home.do">http://www.rcsb.org/pdb/home/home.do</a>
Kaggle datasets	<a href="https://www.kaggle.com/datasets">https://www.kaggle.com/datasets</a>
Google dataset search	<a href="https://datasetsearch.research.google.com/">https://datasetsearch.research.google.com/</a>