

Machine Learning and Computational Physics

Fall 2021

Project

Due: Oct. 15th 2021, 11:59:59 PM PDT

Mid-Term Report (15% of project grade)

This report will ensure that by the due date you have completely settled on your project and have started to make progress towards it. In this mid-term project report (which should be restricted to three pages, 11-point font), please include the following:

1. **Title.** Title of the project and the names of the team members.
2. **Motivation.** In a paragraph sentences describe why this is an important problem to solve.
3. **Objective.** Main objective of the project in no more than three sentences.
4. **Deliverable.** The main deliverable of the project. No more than three sentences. This statement will read like “We will deliver a code that will”
5. Under a section titled “Research Plan”, please provide the following subsections:
 - **Brief description of the algorithm.** Think of the algorithm as something that maps the input to the output. Briefly describe the input and the output.
 - **Architecture.** Using a schematic diagram briefly describe the proposed architecture of the network that will implement your algorithm.
 - **Loss function.** Using a formula describe the loss function.
 - **Training.** Describe the training process including the source of training data.
 - **Validation.** Describe the hyperparameters of your network, and how you will determine them.
 - **Testing.** Describe how you will test the performance of the fully trained algorithm.
6. **Tasks and Timeline.** Split the overall objective into a series of the smaller tasks (say 5-10). Describe these tasks and indicate the timeline for each task.
7. **Progress and Initial Results.** Referring to the tasks above indicate how many have been completed and to what extent. For example “Task 1 has been completed to 80%. What is left to do is” . Also show initial results using plots and/or tables.
8. Anything else you want to convey to me.

Important note: the main use for the mid-term report is to make sure that you have settled on your project, have a path to completing it, and have started to make good progress. This will be graded out of 15.