PROJECT PROPOSAL ASSIGNMENT
NEURAL NETWORKS AND DEEP LEARNING
DATA 445/645

1. Project Selection:

1. Each student/team must select deep learning project topic of their choice. The topic should align with the course objectives and cover a relevant aspect of Deep Learning and Neural Networks.

2. Project topics can be chosen from the following categories:

   (a) Application project: Apply learning algorithms to solve a specific deep learning task.

   (b) Algorithmic project: Develop a novel variant of an existing deep learning algorithm to solve a specific problem.

   (c) Theoretical project: Prove interesting or non-trivial properties of a new or existing deep learning algorithm.

2. Proposal Content:

Your project proposal should be well-structured and include the following sections:

1. **Title:** Provide a descriptive title for your project.

2. **Project Category:** Mention whether your project falls under the application, algorithmic, or theoretical category, or a combination of some of them.

3. **Team Details:** List the team members.

4. **Introduction/Motivation:**

   (a) Clearly state the problem you plan to tackle in your project.

   (b) Explain why this problem is interesting and important in the context of deep learning.

5. **Methodology:**

   (a) Describe the machine learning techniques you plan to apply or improve upon.

   (b) Provide some technical details and reasoning of the chosen techniques.

6. **Intended Experiments:**

   (a) Outline the experiments you plan to run to evaluate your machine learning algorithm.

   (b) Explain how you intend to measure the performance and effectiveness of your approach.

7. **Prior Research:**

   (a) Present at least one example of prior research related to your project topic.

(b) Provide references and links to the relevant papers you plan to use.

8. **References:**

   (a) Include a list of references in a standard format.

   (b) Include references to the used datasets.

3. Proposal Format:

1. Your project proposal should be a PDF document.

2. Use a clear and professional writing style.

3. Ensure that the proposal is well-organized, coherent, and easy to follow.

4. Make sure to include all the required sections and provide sufficient details.

General guideline: The project proposal should provide a clear and concise overview of your project, including the problem statement, motivation, methodology, intended experiments, and prior research. It should provide enough information for the reader to understand the scope and objectives of your project. It's important to prioritize clarity and coherence in your writing rather than focusing solely on word count. Ensure that your proposal effectively communicates your project idea and demonstrates a strong understanding of the problem and the proposed approach.