

REVIEW QUESTIONS FOR PROJECT REPORTS

CS-E4740 - Federated Learning

ABSTRACT

This document contains the peer review questions for evaluating project reports in the CS-E4740 Federated Learning course. The evaluation criteria ensure that the project report aligns with the provided instructions and guidelines.

1. REVIEW QUESTIONS

Instructions: The following review questions assess the quality and completeness of the project report. Each question follows a clear grading criterion based on the project report instructions.

1.1. Title and Introduction

1. Is the title informative and specific?

- 1p – The title clearly describes the project’s focus.
- 0p – The title is vague or misleading.

2. Does the introduction present a clear motivation for the FL application?

- 1p – The introduction defines the FL application in a real-world scenario with networked devices training personalized models.
- 0p – The introduction lacks clear motivation or background.

3. Does the introduction present sufficient background for the FL application?

- 1p – The introduction provides sufficient background, including a discussion of (lack of) existing work on this application.
- 0p – The introduction provides too little background.

4. Does the introduction provide a concise outline of the report structure?

- 1p – The report outline is clearly stated.
- 0p – The structure is unclear or missing.

1.2. Problem Formulation

4. Does the report clearly define the nodes and (weighted) edges of the FL network?

- 2p – Nodes, edges, and their weights are clearly explained.
- 1p – Some parts of the FL network are not well explained.
- 0p – Description of FL network is insufficient.

5. Are the local models properly described?

- 1p – The report specifies the local models.
- 0p – The description of models is unclear or missing.

6. Are the local loss functions properly described?

- 1p – The report specifies the loss functions.
- 0p – The description of loss functions is unclear or missing.

1.3. Methods

6. Does the report justify the choice of the variation measure for FL?

- 2p – The variation measure is clearly explained and justified.
- 1p – The measure is mentioned but lacks justification.
- 0p – The variation measure is unclear or missing.

7. Does the report specify and motivate the federated learning algorithm?

- 2p – The algorithm is well described, including message passing implementation.
- 1p – The algorithm is stated but lacks motivation.
- 0p – The algorithm description is missing or unclear.

1.4. Numerical Experiments

8. Does the report explain the data source used for the experiments?

- 1p – Yes, the reports clearly states the data source so that I would be able to reproduce the data gathering myself.
- 0p – No, the description of data source is absent or lacking.

9. Does the report explain model validation and selection?

- 2p – Model validation strategies are clearly explained (e.g., cross-validation).
- 1p – Some validation is discussed but lacks clarity.
- 0p – Model validation is missing.

10. Are the training, validation, and test losses reported and discussed?

- 2p – The report presents loss values for training, validation, and test sets with analysis.
- 1p – Loss values are provided but lack discussion.
- 0p – Loss reporting is unclear or missing.

1.5. Conclusion and Reproducibility

10. Does the conclusion summarize key findings and suggest improvements?

- 2p – The conclusion summarizes key results and suggests future improvements.
- 1p – The conclusion is present but lacks depth.
- 0p – The conclusion is unclear or missing.

11. Is the report accompanied by a reproducible Python notebook?

- 2p – The notebook is included and allows full reproducibility on <https://jupyter.cs.aalto.fi/>.
- 1p – Some results are reproducible, but details are missing.
- 0p – The notebook is missing or insufficient for reproduction.

1.6. Plagiarism Check

12. Does the report contain existing material without proper citation?

- 1p – No signs of plagiarism; all sources are correctly cited.

- -100p – Yes, there is suspected plagiarism (please report to the course staff for investigation).