

IIT Internship Program
Mid-term Project Report Instructions

Last updated on July 5, 2023

Each team submits one mid-term project report, which is worth 10% of your overall grade. This document specifies what information you should include in your report. For this report, we encourage that you create your PDF file using the LaTeX template provided in this link:

<https://www.overleaf.com/read/cnffybqpthvr>

Or you may create your PDF with Microsoft Word with the same format.

Your report should be written in the same style as a deep learning research paper, and written in a way that a classmate could understand. Consider using the following section structure, though you can use a different structure.

1 Key Information

Your report should have the following information:

Title: The title of your project.

Team member names: List the names and email addresses of all of your team members.

Abstract. An abstract should concisely (less than 300 words) motivate the problem, describe your aims, describe your contribution, and highlight your main finding(s).

2 Introduction

The introduction explains the problem, why it's difficult, interesting, or important, how and why current methods succeed/fail at the problem, and explains the key ideas of your approach and results. Though an introduction covers similar material as an abstract, the introduction gives more space for motivation, detail, references to existing work, and to capture the reader's interest.

3 Related work (Optional)

This section helps the reader understand the research context of your work, by providing an overview of existing work in the area.

You might discuss: papers that inspired your approach, papers that you use as baselines, papers proposing alternative approaches to the problem, papers applying your methods to different tasks, etc.

This section shouldn't go into deep detail in any one paper (for example, there probably shouldn't be any equations) – instead it should explain how the papers relate to each other, and how they relate to your work.

Attempt to demonstrate, as you review the literature, limitations or motivations that point to why your work is a nice next step, or useful replication, or promising analysis (or otherwise, if your work doesn't fall into these categories!).

4 Approach

This section details your approach(es) to the problem. For example, this is where you describe the architecture of your neural network(s), and any other key methods or algorithms.

You should be specific when describing your main approaches – you probably want to include equations and figures.

You should also describe your baseline(s). Depending on space constraints, and how standard your baseline is, you might do this in detail, or simply refer the reader to some other paper for the details. Default project teams can do the latter when describing the provided baseline model.

If any part of your approach is original, make it clear (so we can give you credit). For models and techniques that aren't yours, provide references.

If you're using any code that you didn't write yourself, make it clear and provide a reference or link. When describing something you coded yourself, make it clear (so we can give you credit).

5 Experiments

This section contains the following.

Data: Describe the dataset(s) you are using (provide references). If it's not already clear, make sure the associated task is clearly described. Being precise about the exact form of the input and output can be very useful for readers attempting to understand your work, especially if you've defined your own task.

Evaluation method: Describe the evaluation metric(s) you use, plus any other details necessary to understand your evaluation.

Experimental details: Report how you ran your experiments (e.g. model configurations, learning rate, training time, etc.)

Results: Report the quantitative results that you have found so far. Use a table or plot to compare results and compare against baselines. You should report the Mean Column-wise Root Mean Squared Error (MCRMSE) scores you obtained on the leader board. Comment on your quantitative results. Are they what you expected? Better than you expected? Worse than you expected? Why do you think that is? What does that tell you about your approach?

6 Analysis (Optional)

Your report should include qualitative evaluation. That is, try to understand your system (e.g. how it works, when it succeeds and when it fails) by inspecting key characteristics or outputs of your model. Types of qualitative evaluation include: commenting on selected examples, error analysis, measuring the performance metric for certain subsets of the data, ablation studies, comparing the behaviours of two systems beyond just the performance metric, and visualizing attention distributions or other activation heatmaps.

7 Conclusion

Summarize the main findings of your project, and what you have learnt. Highlight your achievements, and note the primary limitations of your work. If you like, you can describe avenues for future work.

8 References

A complete reference list should be added according to the style as a standard deep learning research paper

9 Team contributions

A brief summary of what each team member did for the project (about 1 or 2 sentences per person). We will read these descriptions. For almost all teams, it will have no effect, but for teams with considerably unequal contribution, we may investigate and/or take necessary actions.