Guidelines for IE 643 End-term Project Review

The end-term IE 643 course project review will be done in two stages. The first stage will involve submission of a report, presentation slides, videos of presentation, code walkthrough and demo (details below) and the evaluation of these submissions. The second stage will include a live viva and a live demo. The viva will include questions based on the evaluation done in stage 1. Please follow the Instructions below for the IE 643 end-term project review.

Stage 1:

Deadline: 19th December 2020 11 59 PM.

The presentation and video created must be stored in a folder named **YourTeamName_IE643_CourseProject_EndtermReivew** in Google drive (please access google drive using your IITB email id and SSO). Then the folder should be shared and the link needs to be provided to the Instructor and TAs. **The links for submissions will be shared a few days before the deadline.**

The main submissions required for the stage 1 of the review are:

1. Project Report (**only pdf** format allowed)
2. Project Presentations slides (can **only** be any of the following formats: pdf, ppt, pptx)
3. Video of the Presentation (can **only** be any of the following formats: .mp4, .wmv, .mkv, .avi, .mov)
4. Video of Code Walkthrough (can **only** be any of the following formats: .mp4, .wmv, .mkv, .avi, .mov)
5. Video of the Demonstration of the experiments (can **only** be any of the following formats: .mp4, .wmv, .mkv, .avi, .mov)

Instructions for Report, Project Presentation and Videos are given below. Please make sure that your submissions comply with the Instructions.

Instructions for Project Report

A template for report is available in moodle and MS Teams. Please use the template for preparing your report.
The following are generic guidelines useful for writing the report, but you are free to make your report perfect by suitable amendments.

A good report generally contains the following contents:
a) An **Abstract** containing a short description of the problem under consideration and the approach taken to solve the problem. A crisp summary of significant results obtained in the project should be highlighted in the abstract.
b) An **Introduction** section describing the overall perspective of the problem, the relevance of the problem in the current scenario, its importance and significance, and how (and why) deep learning techniques can be used to solve the problem.
c) A **Contributions** section with bullet points on the main contributions of your project
d) A **Related work** section which contains a ***comprehensive*** survey of at least three related papers.
e) A **Methods and Approaches** section which details all methods and approaches tried during the project. Distinguish the work done before the mid-term review and that done after mid-term. Include all essential details which explain the work done after the mid-term review. All details must

be included about the methods tried. The deep learning architectures and their components, the importance of each component of the deep learning architecture, the reasons for choosing the deep learning architecture and its suitability for the problem under consideration should be explained.
f) A **Data** section containing details on the data sets used for the project. Description of data size and attributes, nature and type of data (image/audio/text/video etc.), data pre-processing techniques used should be illustrated. Other relevant details on data procurement (the website from where the data is obtained), and how the data is to be used in experiments should be described.
g) An **Experiments** section which contains details on all experiments performed during the project, the training procedure and algorithm, the settings used for optimization algorithm and other relevant algorithmic details need to be included. Details on the hardware configuration should also be described.
h) A **Results** section containing suitable plots and tables describing the results obtained during the project. Comparative results should be included if new ideas are tried. Description of the results and the inferences made using the results should be described.
i) A **Future work** section with details on further work which can be pursued.
j) A final **Conclusion** section summarizing the problem, the methods used, and the significance of results obtained.
k) A **References** section where you cite all relevant papers and websites in your report.

Instructions for Project Presentation

1. The presentation can have a maximum of 20 slides. The presentation should be laid out in the following tentative manner:
* The presentation must be titled with the appropriate paper which is allotted to the team and it must be indicated in the title that this work is done as part of IE 643 course project. The name of the team and Roll number of all team members should also be provided in the first slide.
* The presentation must contain an Outline slide where a broad overview of the contents of the presentation need to be provided.
* A short description of the problem statement (1 slide)
* Summary of work done before the mid-term project review (max 2 slides)
* Major comments given during the mid-term project review (1 slide)
* How the team has addressed the comments given during mid-term project review (1 slide)
* Description of work done after mid-term project review (max 5 or 6 slides)
* If a new idea has been tried, highlight the idea and show a summary of comparison against at least one existing method (max 2 slides)
* If no new idea has been tried, a summary of all the experiments replicated based on an existing work should be presented (max 2 slides)
* Conclusions (1 slide)
* Possible future directions (1 slide)
* References (papers, websites, code repositories, etc.) consulted for the project (1 or 2 slides)

2. Please note that a lucid (clear and concise) presentation will fare better than boring presentations. Please work on making your presentations lively and interesting.
3. The contribution of each team member must be clearly described.
4. The quantum of work will definitely be taken into consideration. Since you do not have end-sem exam for the IE 643 course, you will be expected to put in significant effort for your project, which is at least equal to the effort you generally put in for your end-sem exams. Projects with easy-to-implement ideas will receive a relatively low score.
5. Projects with a new idea (even if the idea is simple) will be considered relatively superior to other projects, which aim to only replicate existing code and existing papers.
6. Finally, please make sure that yours is a well-executed project and is excellently presented.

Instructions for Video Presentation

The team must prepare a video recording of the presentation. Some guidelines for preparing video of presentation are given below:
* All team members must participate in the recording
* The video can run for a maximum of 15 minutes. Longer presentations will be penalized.
* The contribution of each team member must be clearly described in the video of presentation.

For recording the presentation, the teams can use appropriate software. One possibility is to use Open Broadcaster Software (OBS). Please use https://obsproject.com/wiki/install-instructions to install OBS. Then you can use OBS and your presentation slides to create a recording (you can watch e.g. https://www.youtube.com/watch?v=9AKhr8wrXvY on how to prepare a recording of your presentation). Using a face cam during the presentation is preferable. Another option is to use a MS Teams meeting and record it.

Please make sure that your presentation is lively and is not boring. Teams with no video of presentation will receive heavy penalties.

Instructions for Video of Code Walkthrough

The team must prepare a video recording of the code walkthrough. Some guidelines for preparing video of code walkthrough are given below:

* The code walkthrough video can be for a maximum of 5 minutes.

* The code walkthrough must introduce the major code components and modules related to data pre-processing, training/test/validation data splits, neural network structures, training function, evaluation metrics, etc.

*The details of implementation/formulation of loss function need to be described in the walkthrough along with pointers to optimization algorithm used, learning rate used, learning rate schedule, etc.

*All other related details of code crucial to the methodology should be described.

For recording the code walkthrough, the teams can use appropriate screen recording software (e.g. OBS/MS Teams,etc.). There will be a penalty if code walkthrough video is not submitted.

Instructions for Video of Demo

The team must prepare a 5 minute video recording of the demonstration. The demonstration should highlight the aspects that have been implemented. You can decide on the type of demo and the way of demo presentation. Make your demo amenable to be tested real-time based on user (or reviewer) inputs during the viva.

Stage 2:

Based on the evaluation of the report, slides, videos of presentation, code walkthrough and demo, a viva will be held. The viva will include some questions based on Stage 1 submissions and will also involve a live demo. Hence please make sure that your demos work during live viva sessions.

Tentative Dates for viva: 21st to 23rd December, 2020. Time slots for each team will be announced later.