Project Presentation Handout and Rubric

Introduction

All presentations will be pre-recorded and submitted as described below. Each presentation will be a maximum of 7 minutes in duration. The video must be prerecorded. Also, make sure you do not add any background music to the presentation. **Your video should also have a dedicated segment/demonstration highlighting how the model performs on new data**. To ensure that every student has the opportunity to present, each team member should speak for an equal share of the time.

How to Submit

Submit your presentation as a **group** on Quercus by the Project Presentation deadline. Any work that is submitted up to 24 hours past the deadline will receive a 20% grade deduction. No other late work is accepted. Quercus submission time will be used, not your local computer time or any other screenshots that you provide. The video must be pre-recorded; You can use PowerPoint in your videos. If you do not have MS PowerPoint, you can download the software from Here.

Content & Structure

The presentation structure is flexible, as long as you sufficiently cover the necessary content in a way that the audience (your classmates) can understand. You are welcome to be as creative as you want, and to make your presentation fun!

Here is the main content that you should cover:

- **Problem**: What is the problem that you are trying to solve? Why is it important?
- **Data**: What data did you use or collect? What does it look like? Is the amount/type of data sufficient for your project? Was there anything tricky or weird you needed to do with the data? . . . with the train/test/validation split?
- **Data Processing**: What processing did you perform on your data? Why?
- **Model**: What model(s) did you build? What kind of models (CNN, Transformer, GNN, etc.) are they?
- **Demonstration**: You will need to show a demonstration of your project evaluated on new, never before seen data. Try to be creative and engaging with the demonstration.
- **Quantitative Results**: How are you measuring and comparing performance? How well did your model perform?
- **Qualitative Results**: What are some sample predictions generated by your model? Does it make sense? Did you "cherry-pick" the best results or are you showing a representative sample?
- **(Optional) Takeaways**: What did you learn about machine learning from doing this project?

The content does not have to be covered in that precise order. For example, many presentations start with a qualitative result to better explain the problem and piques the audience's interest. A good presentation keeps the audience in mind. The audience of your presentation is your your TAs and instructor. Your presentation should therefore be aimed at people who understands the basics of machine learning, as taught in this course, but who might not be an expert in your project domain.
Please prioritize delivering a presentation that is interesting for the audience, and that you will be proud of. A successful presentation should draw further interest to your work. An excellent presentation will encourage your classmates to talk to you after class.

Presentation Rubric

To help you keep your audience in mind, the rubric is written in terms of the effect that your presentation should have on the audience. **There will be a 20% penalty (in addition to any late penalty) for a presentation that is between 1 to 59 seconds (inclusive) over 7 minutes. Any presentations 8**

minutes or over will receive 0%. The presentation is graded out of 35 points:

- **Problem (4 points)**:
  - **Excellent (4/4)**:
    – Within the first couple minutes of the presentation, the audience can clearly understand why the problem is interesting or important.
    – The audience has a clear picture of the kind and amount of data you are working with, and any potential limitations of your data.
    – A TA in the audience should be able to come up with rudimentary ideas of how to solve your problem based on the information presented in the first couple minutes.
    – The audience is aware of any nuances that makes the problem easier or harder than what someone might expect.
  - **Good (3/4)**:
    – Within the first couple minutes of the presentation, the audience has a clear picture of what problem you are trying to solve.
    – The audience has a good picture of the kind and amount of data you are working with.
    – The audience's understanding of what problem you are trying to solve changes somewhat over the course of the presentation.
  - **Fair (2/4)**:
    – The audience has some idea of what problem you are trying to solve.
    – The audience has some idea of the amount of data you are working with but might have questions that would contextualize (help interpret) the rest of your presentation.
    – The audience's understanding of what problem you are trying to solve changes over the course of the presentation.
  - **Poor (1/4)**:
    – The audience is confused about exactly what problem you are trying to solve.
    – The audience needs more information about the data you have available in order to understand contextualize the rest of your presentation.
    – The audience's understanding of what problem you are trying to solve changes over the course of the presentation.

- **Data Processing (out of 4)**:
  - **Excellent (4/4)**:
    – The audience can picture how you processed your data, and the effect of the processing on the amount, type, and quality of your data.
    – The audience has a clear idea of how your data will be used as input to your model.
    – The audience understands why you decided to process your data a certain way.
    – The audience understands any potential limitations of your approach.
    – A TA or good student in the audience should be able to come up with alternatives and suggestions based on your reasoning.
  - **Good (3/4)**:
    – The audience can picture how you processed your data, and the effect of the processing on the amount, type, and quality of your data.
    – The audience has some idea of how your data will be used as input to your model, but the exact details might be unclear.
    – The audience understands why you decided to process your data a certain way.
  - **Fair (2/4)**:
    – The audience understand the effect of the processing on the amount, type, and quality of your data.
    – The audience has some idea of how your data will be used as input to your model, but the exact details might be unclear.
  - **Poor (1/4)**:
    – The audience is confused about how you processed the data and what its effect is.

- **Model (out of 4)**:
  - **Excellent (4/4)**:
    – The audience has a clear picture of the various types of networks (CNN, RNN, etc.) used in your model. They should also have a sense of how "complex" your model is (e.g. number of layers).
    – The audience is not overwhelmed with too much information that is not necessary to contextualize your results.
    – The audience has enough information to appreciate any intricacies in how you designed your model, or your choice of hyperparameters.
    – A TA in the audience should be able to compare alternative approaches, and make an educated guess about how their alternative would compare to your model.
  - **Good (3/4)**:
    – The audience has a good picture of the various types of networks (CNN, RNN, etc.) used in your model. They should also have a sense of how "complex" your model is (e.g. number of layers).
    – The audience has enough information to appreciate any intricacies in how you designed your model, or your choice of hyperparameters.
    – The audience might be given too much information that is not necessary to contextualize your results (e.g. too much historical information about what models you tried, but whose results you do not show)
  - **Fair (2/4)**:
    – The audience has some idea of what the model you used looks like. They may have questions about the specifics that would influence how they interpret the results.
  - **Poor (1/4)**:
    – The audience has many questions about what exactly your model looks like.

- **Results (out of 4)**:
  - **Excellent (4/4)**:
    – The audience has a precise understanding of the quantitative measurement(s) you used; a TA would be able to compute the measurements themselves if given the model and data.
    – The audience understands why you chose those measurement(s), and can evaluate whether your reasons make sense.
    – The quantitative results are displayed in a way that is easy to understand, and in a way that the audience can come to their own conclusions about the performance of your models.
    – The qualitative results are illustrative, and help the audience contextualize the quantitative results. (e.g., why your model performed well or poorly)
    – The audience knows how you chose which qualitative results to display and has the sense that the group is forthcoming in the presentation.
  - **Good (3/4)**:
    – The audience has a good understanding of the quantitative measurement(s) you used (there may be some issue with precision that does not affect the interpretation of your results).
    – The audience understands why you chose those measurement(s).
    – The quantitative results are displayed.
    – The qualitative results are illustrative, and help the audience contextualize the quantitative results.
  - **Fair (2/4)**:
    – The audience has an intuitive understanding of the quantitative measurement(s) you used.
    – The quantitative measurements are displayed, but not in a way that is easy to interpret the results.
    – The audience has questions about why you chose to display certain measurements.
    – Some quantitative results may be missing.
    – Some qualitative results are shown.
  - **Poor (1/4)**:
    – The audience has many questions about the results.

- **Discussion (out of 4)**:

- **Excellent (4/4)**:
  – The discussion is insightful, interesting, and surprising; the audience learns more from your interpretation than if they were to look at the raw data themselves.
  – The audience understands and is largely convinced of your interpretation of your quantitative and qualitative results (e.g. about whether your model performed well, and why).
  – The audience sees that the team put a lot of thought into understand what made the model successful or unsuccessful.
- **Good (3/4)**:
  – The audience understands your interpretation of your quantitative and qualitative results (e.g., about whether your model performed well, and why).
  – The discussion is insightful: the audience learns more from your interpretation than if they were to take a quick look at the raw data themselves.
  – The audience sees that the team put thought into understand what made the model successful or unsuccessful.
- **Fair (2/4)**:
  – The interpretation of your quantitative and qualitative results is straightforward.
- **Poor (1/4)**:
  – The ideas presented are obvious. It appears to the audience that the team did not much thought into the discussion.
  – There is little attempt to contextualize the results, or to interpret the results beyond reading numbers.

- **Presentation Flow (out of 5)**:
  - **Excellent (5/5)**:
    – There is a natural flow in the presentation that keeps the audience engaged. (Make it fun!)
    – The slides are easy to read. The audiences' attention is drawn to the most important information that you want to convey.
    – The font size is large enough to be legible (including captions), and the audience is not overwhelmed with too much text. (Note: don't do what I do with the lecture slides. The lecture slides double as study material. Your slides don't have to.) There is enough time to read each slide.
    – The audience can understand the presentation. Any domain-specific jargon is either avoided or introduced. (Complex concepts may have to be defined multiple times. It is your job to make sure the audience can understand what you're trying to tell them.)
    – The presentation is well-paced. The presenters do not talk too quickly and are audible at all times.
    – The hand-off between presenters/narrations is smooth.
  - **Good (4/5)**:
    – The audience can easily follow your presentation and are engaged. The flow might be improved (e.g., the audience may have pressing questions that are answered several slides later, rather than right away.)
    – The slides are mostly easy to read, with few distractions or exceptions.
    – The audience can understand most of the presentation content, enough to appreciate your results.
    – The presentation is well-paced. The presenters mostly talk at a good pace, at an audible volume.
    – The hand-off between presenters is smooth.
  - **Fair (3/5)**:
    – The audience is mostly engaged but need to work to following parts of your presentation.
    – Some slides are too wordy, too difficult to follow, or highlights the wrong information.
    – The presentation is still mostly understandable, enough to understand your results.
    – The presenters might talk too quickly or quietly at times.
  - **Poor (2/5)**:
    – The audience has difficulty staying engaged.
    – Several slides are too wordy, too difficult to follow, or highlights the wrong information.
    – The audience has trouble following parts of your presentation.
    – The presenters might talk too quickly or quietly.

- **Marginal (1/5)**:
  – The audience is not engaged and has trouble following/understanding your presentation.
  – There are major issues with the slides (too long, too wordy, not readable in time).
  – The presenters talk too quickly or quietly.

- **Demonstration (out of 10)**:
  - **Excellent (10/10)**:
    – The team is able to demonstrate their results on new, never before seen/tested data and provide a convincing demonstration. The demonstration is engaging and easy to follow.
  - **Good (8/10)**:
    – The team provides a convincing demonstration on never before seen/tested data, but the demonstration is not engaging or easy to follow.
  - **Fair (6/10)**:
    – The team is able to demonstrate their results on new, never before seen/tested data, but it is unclear how well the model is performing.
  - **Poor (4/10)**:
    – The team is able to demonstrate their results on new data and the model does not appear to work.
  - **Marginal (2/10)**:
    – No attempt has been made to demonstrate their results on new data.