ECE 4320 HW 5

Fall 2021

Assigned on November 29, Due at the end of the day on December 7th

**Evaluation of power systems research**

This assignment involves discussions occurring in class on December 1st and 6th. These discussions will relate to videos of five paper presentations from the *Power Systems Computation Conference (PSCC)* that was held online in the summer of 2020.

To prepare for these discussions, please watch the first three of these five recorded presentations prior to class on December 1st and the latter two prior to class on December 6th. Each of these presentations is approximately 20 minutes long. Papers associated with each presentation are also available if you want further details on the presentation’s topic.

Your task is to assess the technical merit and presentation quality of your assigned presentations against criteria similar to those used when reviewing grant funding proposals for the National Science Foundation. A template for your assessments is given at the end of this document.

During the class discussions, you will work with groups of approximately five students in the role of an “evaluation panel” for each presentation. Working with your group, you will complete and turn in the assessment template on the following page via Canvas on the “Homework 5” assignment. Each group member should turn in their own copy of the assessment template on Canvas, but this should be a copy of the group’s assessment (one assessment per group per presentation). The entire group is responsible for assessing each presentation (10 points each).

For students who would prefer to attend class remotely, we will have a virtual option for participating in the discussions on December 1st and December 6th. In this case, please attend class synchronously via the usual BlueJeans link and we will set up online discussion groups. Please plan to turn on your camera for these discussions if possible.

**Please watch the following five videos prior to the classes on the specified dates:**

|  |  |  |
| --- | --- | --- |
| **Paper Name** | **Presentation Link** | **Paper Link** |
| **Watch prior to class on Wednesday, December 1st** | | |
| Learning to Control in Power Systems: Design and Analysis Guidelines for Concrete Safety Problems | <https://www.youtube.com/watch?v=4qXwdjUyVi0> | <https://pscc-central.epfl.ch/repo/papers/2020/623.pdf> |
| A Method for Ensuring a Load Aggregator's Power Deviations Are Safe for Distribution Networks | <https://www.youtube.com/watch?v=XBOSq965Uz0> | <https://pscc-central.epfl.ch/repo/papers/2020/16.pdf> |
| An Exact and Scalable Problem Decomposition for Security-Constrained Optimal Power Flow | <https://www.youtube.com/watch?v=mMbXY2E8Vbg> | <https://pscc-central.epfl.ch/repo/papers/2020/661.pdf> |

|  |  |  |
| --- | --- | --- |
| **Watch prior to class on Monday, December 6th** | | |
| PowerModelsRestoration.jl: An Open-Source Framework for Exploring Power Network Restoration Algorithms | <https://www.youtube.com/watch?v=FkNWp6D1eHA> | <https://pscc-central.epfl.ch/repo/papers/2020/651.pdf> |
| Towards the Construction of a Class of Grid Operational Flexibility Metrics | <https://www.youtube.com/watch?v=BxyOlGCF18c> | <https://pscc-central.epfl.ch/repo/papers/2020/463.pdf> |

**Instructions: Fill out the following assessment template for each presentation. All text in blue corresponds to instructions that should be deleted upon your submission of this assignment.**

**Presentation Title:** *Put the title of the presentation here*

**Members of the Evaluation Panel:** *Put your names here*

**Description of the research project:**

*In a few sentences, describe the goals and technical approach of the research project discussed in this presentation.*

**Evaluation of the project’s intellectual merit:**

**Strengths:**

* *Provide a bulleted list of strengths with respect to technical aspects. For instance, were there technical aspects of the research project that were interesting and mathematically rigorous?*

**Weaknesses:**

* *Provide a bulleted list of weaknesses with respect to its technical aspects. Were there aspects of the project that had technical flaws?*

**Practical Applicability:**

*Using your best engineering judgement, do you think that the idea described in the presentation could be implemented in a practical industry setting? How relevant was the research project to real-world applications? Please provide a score on a scale of (completely impractical) 1 to 10 (very practically relevant). Provide a few sentences justifying your score.*

**Evaluation of the presentation quality:**

**Strengths:**

* *Provide a bulleted list of strengths with respect to presentation quality. Were there aspects of the presentation that were clearly communicated and well explained with respect to both the project’s goal and technical approach?*

**Weaknesses:**

* *Provide a bulleted list of the project’s weaknesses with respect to its presentation quality. Were there aspects of the presentation that were unclear or poorly explained?*

**Suggestions for Improvement:**

*Provide one or two sentences summarizing how the presentation could be most improved in either its technical aspects and/or presentation quality. “This presentation could be improved by …”*

**Overall Panel Recommendation:**

*Check one of the recommendations below:*

The panel rated this presentation and the technical aspects of the associated research project as:

|  |  |
| --- | --- |
|  | Exceptional |
|  | Very Good |
|  | Good |
|  | Fair |
|  | Poor |

*Conclude your evaluation with one or two sentences describing the primary reason for this recommendation. “The primary reason for this recommendation is …”*