BMED6780/ECE6780/BMED4783/ECE4783 (Spring 2020) Med. Img. Proc. (MIP)
Project Final Presentation
Team Member Names:_____

Group #

PART I: PROBLEM STATEMENT & BACKGROUND	Score	Max	Comments
Clearly demonstrate your understanding of the biomedical / clinical **application need** (i.e., answer: what is the problem? How common is your disease/problem, and how can a new approach help?)		**5**	
Clearly demonstrate your understanding of **medical image processing for clinical decision support issues** (i.e., answer: what methodologies / techniques are needed to solve the problem). NOTE: if you address one of 5 opportunities in AI, please highlight.		**5**	
Briefly survey the existing literature to justify your project algorithm choice. (i.e., answer: what methods / solutions have been tried before? What has been lacking? What can new work add to the field?)		**10**	
PART II: METHODOLOGY AND SYSTEM DESIGN	**Score**	**Max**	**Comments**
Data Methodology: Discuss your dataset and the methods used to access it. Be sure to detail the source, size, quality, and any other relevant factors in your overall project design.		**10**	
Medical Imaging Processing for Decision Making (ML) Methodology: Address entire processing and decision-making pipeline including demonstrating understanding of key feature extraction, selection, and/or machine learning algorithms used. Show the detailed parameters for each algorithm, and which combinations you explored. Justify "why". If you focus on one of 5 grand opportunities, please highlight.		**15**	
Clearly explain your computing system with functional modules in a **workflow diagram** (i.e., show step-by-step system, which should summarize the entire methodology section)		**5**	
PART III: RESULTS	**Score**	**Max**	**Comments**
Quantitative Results: Show intermediate steps of data analysis, and be quantitative in analyzing your results. Show the results/performance of your overall system. For training decision making models, please conduct sensitivity of model parameters (i.e. heatmap). For model performance, please plot predictability (i.e. internal validation versus external validation). If you focus on one of 5 grand opportunities in AI application to MIP, do highlight explicitly.		**30**	
GUI Video Demo: Demonstrate a working GUI that runs your project's algorithms and visualizes the results. A short video showing the GUI's operation is preferred.		**15**	
PART IV: CONCLUSIONS	**Score**	**Max**	**Comments**
What did you learn from working on this project? How could your work be extended in the future, if the course was longer?		**5**	

Additional comments on back please!

Grader Name: _____ **Total:**_____**%**

Other Comments:

Preparation Guide and Tips

Your final presentation is similar to the previous presentations, but will be presented to the entire class rather than just the teaching team. Because presentations will be in remote learning setting, presentation needs to be pre-recorded. Then a synchronous playing out session with Q&A will be set. We look forward to seeing your final products!

Suggestions for Presentation Style.

1) Title page with photos and emails.
2) Introduce your project with a clear problem statement to explain 1-2 biomedical/clinical application need(s); and a few technical challenges in medical image processing and AI
3) Provide a summary table of your literature critique with the goal of supporting your project methodology development – What methods/solutions exist? What is lacking? What are the strengths/limitations of each method? **(**A table is a great way to assess strengths/weaknesses of methods)
4) Give clear description and derivation of the methods you used in solving your project problem. Please show how the methods work, and explain why you selected this method, especially as opposed to other candidate methods.
    a. Show your final, detailed project workflow diagram, which should briefly and visually recap the entire methods section (it can also be great to present the diagram first, and then have a slide or two of methods addressing each block!)
5) Show preliminary results. Show intermediate steps of the data analysis, as applicable to your particular project. Be quantitative and visual where possible. Discuss any issues you've run into along the way, and how you have addressed them
    a. Show a video demo of your GUI in action (~1-2 minutes)
6) Present a few concluding thoughts to tie the project together, and propose how your project could be extended if additional time were available