# CS-Chest X-Ray Case Study

**Submission format: Link to Github repository (submit to Canvas under the posted assignment) and presentation in class**

**Individual Assignment**

**General Description:** Submit to collab assignments a link to your Github repository for this case study and come to class prepared to present your presentation

**Preparatory Assignments –** Case Study review assignment and working with image data homework.

**Why am I doing this?** This case study is to help you become more familiar with the data science life cycle, and practice answering a research question. This case study focuses on using image data, as well as requires thorough analysis via code. It also focuses on creating an appealing presentation for an audience, preparing to present, and presenting findings to an audience. You are encouraged to read through the materials given to you to help find a solution, or do your own research!

- Course Learning Objective: Analyzing image data
- Course Learning Objective: Practice using data science to answer a research question
- Course Learning Objective: Creating a presentation
- Course Learning Objective: Public speaking and presenting

**What am I going to do?** You will start by reading over the one-page prompt for the case study. In that prompt, you will get an idea of the goal of the case study. Take notes as you read through the hook document and rubric, and ask questions as they come up. If you have ideas of how to tackle the task, start researching and testing them, or use the provided materials to get started. Then make a plan for production of your presentation and readme.md files after completing your analysis.

**Tips for success:**
- Have fun! Use this case study as an opportunity to use data science to learn more about something you're passionate about.
- Use your resources! There are several linked with this assignment, but feel free to ask questions to the professor or your TA if you're stuck.
- There is no specific model that we're looking for so just do your best to find a solution to the task at hand

**How will I know I have succeeded?** You will meet the expectations on CS-Chest X-ray Case Study when you follow the criteria in the rubric below.

| Spec Category | Spec Details |
| --- | --- |
| Formatting | • Repository- A github repo (and cloud storage folder if necessary) containing all materials<br>　○ Submit a link to the repo<br>　○ Contents:<br>　　▪ README.md<br>　　▪ SRC<br>　　▪ Data<br>　　▪ Presentation<br>　　▪ License<br>　○ Use pdf format when possible<br>　○ For code and data products use the appropriate format for whatever it is |
| README.md | • Goal: Holds the context of the case study, steps taken, data source used, and any images or deliverables you create with your code.<br>　○ Explain/ reference any data pre-processing that occurred<br>　○ Include any visualizations or evaluation metrics of your model from your code<br>　　▪ Accuracy on training set and testing set, confusion matrix, etc.<br>　○ Highlight any important findings or techniques learned/ used<br>　○ Include references- use IEEE Formatting |
| SRC | • Goal: A folder in your github repository for storing all code sources during analysis<br>　○ This does not have to be "pretty" but it should be readable by another student in this course so that they can follow what methods you used to complete the assignment |
| DATA | • Goal: A folder in your github repository for storing all data used in this assignment<br>　○ This is given in this repo, so just copy it over! |
| Presentation | • Goal: A .pdf file of a PowerPoint presentation that gives an overview of your work on this case study.<br>　○ This should include your research question, your methods for conducting analysis, and the findings of your model in a nice format. |
| LICENSE.md | • Goal: This file explains to a visitor the terms under which they may use and cite your repository.<br>　○ In this case, the MIT license is appropriate |

Thanks to Professor Alonzi for this rubric template!