Case Study Rubric

Due Date: TBD

Submission Format: Upload PDF document and Github link via Canvas.

General Description: Submit to Canvas a Github link and PDF showing the work you performed to replicate the case study.

Preparatory Assignments: Previous work in the course.

Why am I doing this? This case study will prompt you to build and optimize a facial recognition model using a simple CNN (Convolutional Neural Network). After this procedure, you will investigate weaknesses in the model by conducting EDA on misidentified images.

What am I going to do? At this point in the course, you have already constructed at least one data science project with the help of your group. Now, you will replicate this facial identification case study in the workspace of your choice, making appropriate critiques which you report via a deliverable assigned by your professor. Check the course assignments section for specific details on submissions. Typically, deliverables will include:

- Written portion PDF, complete with references
- Github link with data and code

Spec Category	Spec Details
Formatting	Submit the following assignments in Canva. You should follow this general structure, but exact expectations should be confirmed with your instructor: ● Written PDF ○ Includes a memo written about the case study. Follow appropriate structural guidelines, as prompted by your instructor. Include references as needed. ● Data and Code ○ Submit a github link containing the data and code used in the case study. ○ Add additional data or code, if necessary.
Written Portion	Discuss your interpretation of the case study by creating a one-page written response. Follow the following structure: ● Begin with a short executive summary (1-3 sentences). This should contextualize your main takeaways from the case study. ● Discuss the process you took to implement the code, discussing any errors you encountered. This section should be about one

	paragraph. ● Discuss what you enjoyed about the case study (coding techniques, analysis, etc.) and list any interesting facts you learned. This section should be about one paragraph. ● Discuss any critiques you have about the case study. This section should be about one paragraph. ● In another paragraph, construct a conclusion to discuss overall findings and opinions.
Code	Include the following items in your Github repository. You may rely on the ReadMe file for additional guidance, if needed: ● Output from the "STEP5-final_testing.ipynb" script, which can be found in the SCRIPTS folder. When run in Rivanna, this script will train a facial recognition model for 100 epochs using the data in the "celebrities_all" folder. After executing successfully, an **"epoch_results.csv"** file should be generated. ● Output from **"epoch_analysis.ipynb"**, which will conduct EDA on the "epoch_results.csv" file, allowing you to analyze how identification accuracy changed over the course of epochs. ● Output from "**misidentifications_EDA.ipynb"**, which will allow you to conduct EDA on specific images misidentified by the model. ● Add notes to scripts, as you see fit.
References	Include references where appropriate, particularly at the end of the written assignment. Cite in the style of your choosing.