Weather Event CNNs Case Study Rubric

DS 4002 – Fall 2025: Joshua Yu
Due: TBD
Submission format:

- **Submit link to finalized GitHub repository to Canvas with model metrics in OUTPUT folder and a final reflection document.**

Individual Assignment

Why am I doing this? This is an opportunity to use and/or adopt technical skills and understanding with image data to generate relevant models, and to present your findings.

What am I going to do? In this case study, you will read through the hook document, rubric, and supplemental resources to explore the context and requirements of this case study. Then, you will use the given GitHub repository to access the case study materials to follow along with the case study and observe. You will be working with two CNNs – InceptionV3 and ResNet-50 – and using transfer learning to train these models specifically on your weather-event type dataset. Saving the best performing weights, you will test the models on the test set and use the metrics given to observe the performance of these two models. Your final output should be images of the printed metrics and graphs.

Your final deliverables should include:

- Images of the metrics for both CNNs
- A GitHub repository containing all materials used

How will I know I have Succeeded? You will meet expectations on this weather event case study when you follow the criteria in the rubric below.

Spec Category	Spec Details
Formatting	● Repository – A GitHub repo (link submitted to Canvas) containing the original GitHub repository's contents and an added OUTPUT folder with model outputs ● Response Paper o Keep the document within 1 page o The outline of the document should be the following: ▪ Title ▪ Name, Date, Course ▪ Two Headers: ● Results Summary ● Case Study Reflection

GitHub Repository	● Contains two screenshots of the given metrics for each model printed by the script ● Also contains the images of the confusion matrix produced by the given scripts
Written Response	Discuss the findings and reflections of this case study in a one-page document with the following sections: 1) Results Summary – A paragraph detailing the results of the case study a. Provide context to the models used b. Summarize the performance of the models. 2) Case Study Reflection – Detail personal lessons and takeaway