

Distracted Driving Case Study Rubric

DS 4002 – Fall 2025 – Luke McMeans

Individual Assignment

Preparatory Assignments – Any prior projects up to this point in the course

Why am I doing this? This case study helps strengthen data science skills by building a project. You'll work with the Distracted Driving Dataset to train a Multilayer Perceptron (MLP) model, evaluating its performance through a confusion matrix and identifying common misclassifications. From this, you'll reinforce your knowledge of reproducible workflows, organized project directories, and technical communication across the data science community.

- Course Learning Objective: Implement a Multilayer Perceptron for image classification
- Course Learning Objective: Structure, document, and publish your analysis in a reproducible format for a technical audience

What am I going to do? You'll create an organized GitHub repository with all relevant data, scripts, documentation, and outputs (similar to the organization of an MI3 assignment). With this, readers will be able to replicate their results should they choose to. The repository for this case study can be found at <https://github.com/McMeans/ds-4002-cs3>.

Deliverables Include:

- GitHub repository containing your scripts, models, documentation, and results
- List of references that helped you along your way

Tips for success:

- Don't be afraid to simplify your workflow. Clarity matters more than complexity
- Don't overthink it. A clear presentation of fundamentals is more valuable than an unclear presentation of cutting-edge techniques.
- Talk to the instructors, TAs, and peers. This is a creative assignment, and you are allowed to show ideas to people for comment.

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

Spec Category	Spec Details
Formatting	<ul style="list-style-type: none">• One GitHub Repository• To ensure reproducibility, the repository will adapt parts of the TIER Protocol 4.0. The top-level page of the repository should contain:<ul style="list-style-type: none">○ A README.md file (which auto displays)○ A LICENSE.md file (use MIT as default)○ A SCRIPTS folder

	<ul style="list-style-type: none"> ○ A DATA folder ○ An OUTPUT folder
README.md	<ul style="list-style-type: none"> ● Goal: This file services an orientation to everyone who comes to your repository. They should gain enough understanding to get started. ● Use markdown headers to divide content ● Make an H2 (##) section explaining the contents of the repository ● Section 1: Software and platform section <ul style="list-style-type: none"> ○ The type(s) of software used for the project ○ The names of any add-on packages that need to be installed with the software ○ The platform (Windows, Mac, or Linux) used ● Section 2: A map of your documentation <ul style="list-style-type: none"> ○ In this section, you should provide an outline illustrating the hierarchy of folders/subfolders in your directory, and listing the files stored within each.
LICENSE.md	<ul style="list-style-type: none"> ● Goal: This file explains, to a visitor, the under which they may use and cite your repository ● Select an appropriate license form the GitHub options lsit on repository creation ● Usually, the MIT license is appropriate
DATA folder	<ul style="list-style-type: none"> ● Goal: This folder contains all the data for this project ● You should include the initial data, and the final data <ul style="list-style-type: none"> ○ If needed, the code in the SCRIPTS folder should be able to get you from the initial data to the final one (e.g., you may have a cleaning script).
SCRIPTS folder	<ul style="list-style-type: none"> ● Goal: This folder contains all the source code for your project <ul style="list-style-type: none"> ○ Your code should contain some sort of visualization, whether it be your exploratory data analysis or reporting your results ● Try to name your scripts meaningfully and document with informational comments
OUTPUT folder	<ul style="list-style-type: none"> ● Goal: This folder contains all of the output generated by your project (models, figures, tables, etc.) ● Use informative names for your files
References	<ul style="list-style-type: none"> ● All references should be listed at the end of the document ● Use IEEE Documentation Style

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