CS3 Rubric – Case Study Create

DS 4002 - Fall 2025
Due: TBD

Individual Assignment

Why am I doing this? Parking tickets cost UVA students and Charlottesville residents thousands of dollars each year. This case study challenges you to use data science to predict where and when parking violations are most likely to occur. By analyzing real civic data, you'll practice the complete data science workflow—from messy data to actionable insights—while working on a problem that affects your daily life. This project demonstrates how data science can solve real-world problems and will give you a portfolio-ready example of time series analysis and predictive modeling. This deliverable will include

- A Github repo with all the materials used including code, data, and results

What am I going to do? You will analyze historical parking ticket data from Charlottesville to build a model that predicts parking violation frequency by location and time. Starting with raw data from the city's Open Data Portal, you'll clean and explore the dataset, engineer meaningful features from dates and locations, train multiple machine learning models, and evaluate which approach works best. Your final deliverable will be a comprehensive Jupyter notebook documenting your complete analysis with clear explanations and visualizations that communicate your findings.

How will I know I have Succeeded? You will meet expectations on CS3 Create Case Study when you follow the criteria in the rubric below.

Formatting	● GitHub repository ● Fork or clone a GitHub repository from https://github.com/SanjayKarun4444/DS4002-CS3 and make sure it contains the following ○ README.md ○ LICENSE.md ○ DATA folder ○ SCRIPTS folder ○ RESULTS folder
README.md	● <u>Goal:</u> provide a brief summary of your case study ○ Brief summary of the results you produced in the case study and explain the contents of the repository. This should

	provide enough information to guide people through your repository ● Provide information on any changes or additional exploration ● Brief reflection of what you have learned.
LISCENSE.md	● Goal: This file explains to a visitor the terms under which they may use and cite your repository. ● Select an appropriate license from the GitHub options list repository creation. ● Usually, the MIT license is appropriate.
DATA Folder	● Goal: Include all the data used for this project ● Include the initial raw data and final cleaned data analyzed
SCRIPTS Folder	● Goal: Include all the code used for the project ● Code must have appropriate comments throughout ● Includes scripts used to execute the parking ticket hotspot prediction ○ Time series analysis script ○ Parking ticket hotspot prediction script
OUTPUTS folder	● Goal: Display your findings and lessons learned ○ This folder contains all of the output generated by your project, e.g. figures, tables, cvs, etc. ● Use informative names for your files some of the reflection in your README

Acknowledgements: Special thanks to Jess Taggart from UVA CTE for coaching on making this rubric. This structure is pulled from Streifer & Palmer (2020).