UDACITY

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Machine Learning Capstone Project

REVIEW

CODE REVIEW

HISTORY

Meets Specifications

Dear Student,
I think you have done a really remarkable job in this report, from the structure to the reasoning and the justifications are really good, I think this is probably one of the most difficult things to demonstrate in a report, and here is more than clear. Congratulations on completing the final project in the Machine Learning Engineer Nanodegree!.
I wish you the best of luck in your future endeavours!!.
Cheers!

Definition

✓

Student provides a high-level overview of the project in layman's terms. Background information such as the problem domain, the project origin, and related data sets or input data is given.

- Very good introduction to the problem and well done by including the link to previous work that gives a good support and foundation to the problem. Nice job!.
- You have done very well by including the link to the dataset. This aspect is forgotten sometimes!.
- I like that you have mentioned why this is an interesting project to solve because it gives a context where the project can be useful:

> We all know how significant the role of a 911 employee is. They are the ones who address our emergencies. The team works 24x7 non-stop. Any challenges they face in their job will directly affect the public in their life or death moment.

✓

The problem which needs to be solved is clearly defined. A strategy for solving the problem, including discussion of the expected solution, has been made.

- Very good decision with the inclusion of a very clear goal, this way the reader will know what to expect from the report:

> The goal is to create a regressor model which performs the following:
> ➢ Predict the number of emergency calls expected in emergency category – EMS
> ➢ Predict the number of emergency calls expected in emergency category – Fire
> ➢ Predict the number of emergency calls expected in emergency category - Traffic

- In this section, the problem that arises is clearly defined. You have explained the strategy and the techniques that will follow in more detail. Great job!.

✓

Metrics used to measure performance of a model or result are clearly defined. Metrics are justified based on the characteristics of the problem.

- Very good discussion and justification of your metric. I think that R^2 is a very reasonable metric.

Analysis

✓

If a dataset is present, features and calculated statistics relevant to the problem have been reported and discussed, along with a sampling of the data. In lieu of a dataset, a thorough description of the input space or input data has been made. Abnormalities or characteristics about the data or input that need to be addressed have been identified.

- I think that you have included very interesting and complete information about your dataset like size and discussions about the information extracted, in addition, you have explained the problems observed in the data and how you addressed them. This kind of analysis is essential to understand your dataset. Really good job!.
- To include examples is always very interesting for the reader, this way the dataset is understood and probably the preprocess decisions will be interpreted better, too. Nice job!.

✓

A visualization has been provided that summarizes or extracts a relevant characteristic or feature about the dataset or input data with thorough discussion. Visual cues are clearly defined.

- Very good section here. Your figures are very useful to understand better your dataset. Well done!.

- I especially like the discussion based on the visuals, this kind of discussions is very important to know better the dataset and gives you a lot of clues about how to deal with the problem. Nice job!.

✓

Algorithms and techniques used in the project are thoroughly discussed and properly justified based on the characteristics of the problem.

- Nice overview and explanation of the algorithm used in your solution. This is is a very important aspect of a Capstone Project, because everything will be related to that.
- Good touch by including the hyper-parameters for each algorithm and by explaining them.

✓

Student clearly defines a benchmark result or threshold for comparing performances of solutions obtained.

- You have done a fantastic job explaining your benchmark and providing an objective value to be able to compare with your result.

Methodology

✓

All preprocessing steps have been clearly documented. Abnormalities or characteristics about the data or input that needed to be addressed have been corrected. If no data preprocessing is necessary, it has been clearly justified.

- Nice job!. You have included a detailed explanation about the preprocessing steps. I especially like that this section is coherent with the "Data Exploration" section, this is a very good aspect that sometimes is not taken into consideration when writing the report.

✓

The process for which metrics, algorithms, and techniques were implemented with the given datasets or input data has been thoroughly documented. Complications that occurred during the coding process are discussed.

- A lot of details about the implementation have been mentioned not only in this section but along the report too, finally many details have been provided for each step, which makes the experiment reproducible. Good job.

✓

The process of improving upon the algorithms and techniques used is clearly documented. Both the initial and final solutions are reported, along with intermediate solutions, if necessary.

- The explanation about the refinement process, the hyperparameters changed and the justification of the changes are clear. Good job!.

Results

✓

The final model's qualities — such as parameters — are evaluated in detail. Some type of analysis is used to validate the robustness of the model's solution.

- Good job mentioning the final model clearly after the refinement and justifying it.
- You have included a discussion about the robustness of the model using the results of the model to support the discussion. Nice job!.

✓

The final results are compared to the benchmark result or threshold with some type of statistical analysis. Justification is made as to whether the final model and solution is significant enough to have adequately solved the problem.

- The model performance has been compared with the benchmark and the result have been justified. Nice job.

Conclusion

✓

A visualization has been provided that emphasizes an important quality about the project with thorough discussion. Visual cues are clearly defined.

- Excellent decision with the visual. This is a great demonstration of the behavior of your final model.

✓

Student adequately summarizes the end-to-end problem solution and discusses one or two particular aspects of the project they found interesting or difficult.

- I like the reflection you have done in this section. You have included the steps followed to solve the problem and you have discussed each step mentioning the most difficult and interesting parts of each of them. Nice job!:

  > The interesting part of the project was finding the outliers and error records. The difficult part was the problem I faced when splitting regions.

Discussion is made as to how one aspect of the implementation could be improved. Potential solutions resulting from these improvements are considered and compared/contrasted to the current solution.

- In this section you have provided some good possible improvements. Nice job!:

> I have been researching about Stacking models. This seems to be interesting, and could be used to improve the performance of the existing model. In stacking since it uses multiple model, prediction could be better than a single model.

Quality

Project report follows a well-organized structure and would be readily understood by its intended audience. Each section is written in a clear, concise and specific manner. Few grammatical and spelling mistakes are present. All resources used to complete the project are cited and referenced.

- I really have enjoyed this review, I think your methodology is very good and probably that is the most difficult part to demonstrate in a report. Really good job!.

Code is formatted neatly with comments that effectively explain complex implementations. Output produces similar results and solutions as to those discussed in the project.

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