UDACITY

Back to Machine Learning Engineer Nanodegree

Machine Learning Capstone Project

REVIEW

CODE REVIEW

HISTORY

Meets Specifications

Dear Excellent Student,
Congratulations!!! You made it.👍
This work is so outstanding and it is amazing that you made it this great in just the first shot. You have a really great learning attitude, keep it UP! I did enjoy the great use of visuals to explain your points and to illustrate the steps involved in the work. I really hope the lectures and this project in particular have effectively taught you the fundamentals of Machine Learning.👏👏
Carry on with your Great Work! Cheers!

I am so moved by the strength of this first submission.
`This project could get nominated as an outstanding work`. So, please comment after rating this work as to how much time it took you to bring up this work. Please talk of the time spent on research and that spent in doing the actual work and also, what the main challenges faced were. This can help someone else working in this same field. I look forward to reading from you. Thanks!

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.

Splendid! This is a nice idea and this study may be of great help to the real-world if we formulate a strong model. It is essential to know what our goal here and your discussion provides solid input to it. Great job choosing an appropriate dataset for this. Ideally, we choose topics that interests us and it is clear you really want to know more about the subject and that is a great motivation tool to strive hard for this project.

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.

Excellent discussion of the problem! This is a really interesting project since it affects the real-world and with the proper tools of Machine Language, hopefully it will aid people who work in this field. The strategy is well-thought of and has nice supporting data and features to arrive to the solution.

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

Excellent choice for the metrics. They are indeed substantial to the problem and you have provided a nice justification on their usage and importance. Keep up the great work!

Suggestions and Comments

- Here is a good link on Choosing the Right Metric for Evaluating Machine Learning Models. It can help you confirm if you are on the right path with your chosen metric.
- Have a look too at Metrics to Evaluate your Machine Learning Algorithm, you might find interesting.

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.

Great job discussing the relevant data and features to the problem. It is good to filter out the unnecessary data and reduce noise. It is also important to know whether these features are essential to the data and if it can help you with your model. We have to know which features are factors in the model. Everything was discussed in detail even the anomalies in the data. You really know your data well and this would help you in understanding the significance of each data related to the environment.

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.

Awesome usage of visualizations and discussion of the features of the dataset! These types of visualizations show emphasis on the data that we need to solve and it is good to see that the data is sorted out in a way that the readers can easily understand it even without too much context.

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

Fantastic choice of algorithms! These are really efficient and it seems that it fits well for your project. We need to identify our data and what is the optimal algorithm for them and I believe your choices are superb.

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

Superb choice for a benchmark! It is essential to choose the proper benchmark for us to compare the final model later on.

Suggestions and Comments

Some notes for you are given below:

- The reason for a choice of a benchmark model is to help us evaluate at the end of the work whether or not we have done any reasonable and acceptable improvement to the problem.
- It is often advised that as a beginner you chose a benchmark model you are more likely to obtain better results than after running your own model. This will make the essence of a benchmark model and machine learning as a whole clearer to you.
- It is also necessary that both the benchmark model and the model you build work on the same dataset. This places both models on a common ground for evaluation.

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.

Great! That is a nice elaboration on the preprocessing steps you have taken in the analysis. It is nice that you have identified the possible problems we may encounter and have taken the necessary steps to correct them. Good insight.

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.

Great job discussing the different metrics and techniques implemented with the given dataset! It is nice that you discussed the step-by-step process thoroughly. Readers would have an easy time understanding the process, it still contains some technical terms but they are easily understandable. 👍🏽

Suggestions and Comments:

You could include a visualization of the architecture in your descriptions by using this Keras tool for visualization as visualisations are very useful in explaining complex stuff.

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.

Excellent work discussing the areas where the model has more room to improve. The approaches you took are good measures and at least you gained a successful result after trying them all. We should always find a way to improve the performance and robustness of our model to achieve optimal results.

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.

The final model and supporting qualities were evaluated in detail. Great improvement!

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.

Nice comparison of your model's results to the benchmark. We have no doubts that your model performs well given the results you had compared to that of the benchmark prediction.

Conclusion

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

Good work! A relevant quality about the project has been visualized and discussed.

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

A great indicator of a successful capstone is getting further realizations in regards your topic. It seems that learned the obstacles and the idea on how to solve them, that is good. Knowing what your model's strengths and weaknesses is essential in knowing where to improve and where we can compromise if ever it is necessary.That insight will take you deeper to vast expansions of your knowledge in that field and in Machine Learning.

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.

Great awareness of you to provide knowledge in improving your model. This may either require new features or algorithms but these approaches are what makes us learn more and be curious about Machine Learning. There are so many ways to improve and combine existing algorithms and I believe it is a good idea to try and try different techniques as long as it matches the data and it is relevant to the problem.

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.

Fabulous job! Well organized structure and great writing skills. It was a delight to read this.

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

Excellent work with the code. There are proper comments to guide the reader. Great work!

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Student FAQ