

## PROJECT

## Machine Learning Capstone Project

A part of the Machine Learning Engineer Nanodegree Program

## PROJECT REVIEW

## CODE REVIEW

## NOTES

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## Meets Specifications

Dear student

This is the first reviewer from a couple of days ago. Allow me to be the first to congratulate you on completing the Machine Learning Nano Degree! You've done a great job demonstrating a solid understanding of the fundamentals in machine learning and diving deeper into how to apply them to computer vision learning. I think you've done a really solid job applying feedback to your project and demonstrating that you can think critically about your work. Again, congratulations on passing and I wish you all the best of luck with your future coding endeavors!

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.

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.

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

Using full sequence comparison for accuracy calculation makes accuracy a robust metric for our purposes.

What you're arguing (I think) is that the (weak) law of large numbers essentially levels imbalances here.

Regardless of whether this is actually true, I think it's unreasonable to for students in this course to have to do mathematical proofs in order to pass this project and I feel you've provided a clear justification for a fairly minor point. One thing that would have been a great argument for using accuracy is that all of the other studies in this problem domain use it as a metric. Thus, accuracy allows you to compare your results to the best approaches in the field directly.

## 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.

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.

Everything is labeled now! Looks great!

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

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

## 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.

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 documenting all of your settings!

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.

## 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 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.

Great result! Now you'll have to scale up your model's complexity and beat this result!

## Conclusion

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

Student adequately summarizes the end-to-end problem solution and discusses one or two

particular aspects of the project they found interesting or difficult.

The most frustrating experience was prolonged feedback times for each tuning iteration as the hardware I had was horrendously slow.

It's always a great idea to start out with a very small set of data and a simple model and then scale up from there. Especially if you're trying a completely unfamiliar implementation for the first time. Great job working through this process and getting it right!

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.

## 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.

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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