Do Carrots Improve Your Vision: A Dive into A Societal Truth

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Introduction

For the majority of my childhood, my parents convinced me that carrots improve my vision, but to what extent? I already had pretty much perfect 20/20 vision whenever I visited the eye doctor, and eating carrots wouldn't necessarily increase it beyond that point. This "fact" is believed to be true because carrots in general have a high amount of nutrients and vitamins that support the idea that being on a diet of carrots will improve your overall health. Beta Carotene from carrots is converted into vitamin A, which a lack of will cause the formation of cataracts and the early start of blindness. Carrots also contain lutein which increases pigment density and protects your retina (Winkler, 2009). While these nutrients are great for maintaining your eye's health, they don't necessarily "improve" your vision. Carrots won't restore a blind person's vision. If carrots improving vision is more of a societal truth rather than a factual truth, thenby utilizing the CRISP-DM methodology, I will attempt to prove or refute it once and for all.

Methodology

The CRISP-DM methodology consists of six distinct phases which loop around to form a cycle. The phases consist of business understanding, data understanding, data preparation, modeling, evaluation, and deployment (Smart Vision-Europe). Here I will apply the CRISP-DM methodology to prove or refute the carrot claim above.

Business Understanding

The goal of this experiment will be to prove or refute the claim that carrots improve eyesight to see beyond what it already has. The tools and techniques I will use will be to create a model that analyzes a group of test subjects that has both people with poor eyesight and strong eyesight as a comparison. The poor eyesight subjects will be on a diet of carrots and will be

comparing their eye test results with the strong eyesight participants. Another layer to the experiment will be to keep the strong participants on a carrot diet and test whether their eyesight will improve any further. The success of the experiment will be able to see whether or not carrots actually improve eyesight regardless of how healthy the subjects' eyes are currently. If the experiment proves to be successful, I should be able to create a predictive model that correctly prescribes a carrot diet to improve one's eyesight based on prior and pending health conditions. The predictive model could utilize previous test results and add mine as a possible training set to make the predictions more accurate.

Data Understanding

The data collected will be numerical scores based on the eye test results from both the weak and strong eyesight participants, compared to the number of carrots in their diet, and grouped by health conditions to make sure there are enough results to prove the extent of "improvement" for each case. For the sake of success, the trends I should be looking for is a positive correlation between test scores and the carrot intake for each subject. For poor eyesight participants, a much higher improvement than strong eyesight participants taking similar tests. And for the extra tests on strong eyesight participants, perhaps a small improvement in eyesight with increasingly difficult tests.

Data Preparation

I will select a set of data that shows the most promise in terms of proving the claim, or I will select a set of data that shows the most promise in terms of refuting the claim. This would solely depend on whether I am working for a food corporation that is selling carrots or working towards a lawsuit of some kind. I have no idea, however, the work must be done with a clean set of data. I will need to address any inconsistencies in the data, filtering out data points that have

empty values and making sure each data point is calibrated. I can then combine existing data attributes or create entirely new ones to account for certain values.

Modeling

Once the data set has been cleaned and there seems to be a clear trend to prove or refute the carrot claim, I can now work on the predictive model that utilizes both the data set I cleaned, any older data sets from previous experiments, and the remaining data points I might have from the experiment. The predictive model should be able to take into account the person's health factors, eye test results, health conditions, and use of glasses to predict the carrot diet required to improve their eyesight. Using the model, I should ask those people to try the carrot diet and monitor their successes or failures in their following eye tests. Using the results from the eye tests, I can train the predictive model further to make sure that it would work for anyone. If the results also proved that eyesight could be improved beyond the perfect scale, then I could use it to predict carrot diets for people wishing to have superhuman sight.

Evaluation

Depending on whether the model is a success or not, it is at this point where I verify it meets all business objectives. I see whether there are improvements to be made in the model, whether the data collection model was sufficient, and whether the predictive model is efficient. Depending on any of these criteria, if changes are to be made, they should be taken care of now. Once the changes are taken care of, I will evaluate the model once again to make sure it follows business objectives a bit better than before. I will also determine the next steps for the model. Whether it should be deployed or whether it should be approved by the business before deployment.

Deployment

At this point in the CRISP-DM methodology, all the planning and results come to fruition. I create a plan to deploy my model either for commercial use and also create a plan to maintain and monitor the model through its iterations and uses. In addition to the deployment, I will write up a report detailing and organizing the results. Not only do I detail the results, I should also detail the experience gained during the entire process. The deployment phase will also include a final presentation on the results and what's to come for the following years.

Conclusion

Do carrots actually "improve" a person's eyesight? I attempted to use the CRISP-DM methodology to formulate, create, and evaluate a predictive model that would use experimental results of eye test results versus a carrot diet to prescribe a diet for people of various eyesight strengths.

References

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