

DSC 680

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Proposal

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Learn To Write Your Letters

Topic

Learning to write your letters is hard. This application aims to help those who would like help writing the alphabet with their mouse.

Business Problem

As today's kids and adults move into the digital world, they will ultimately have to start writing with a mouse or finger. With this application, I hope to help kids and adults, write with their mouse and/or finger.

Datasets

The data will be created from the application. The application will have a training button that will allow the user to write all the letters in the English alphabet to help establish a good training dataset for the model to use.

Methods

I will use deep learning methods using TensorFlow's Sequential class. I will create letter images from the application to use as a training dataset for the model. The model will use convnets along with data augmentation and dropout layers to prevent the training data from overfitting. Once the model is

trained, the user can then use the application to practice their letters. The application will prompt the user to write a specific letter (upper and lower case), then the application will let the user know if they wrote the correct letter properly.

Ethical Considerations

Ethically, the application may be used inappropriately. Training images that are not the correct letters or inappropriate images could be entered into the training part of the application and the application would not be able to filter them out.

Challenges/Issues

With any learning model like this, getting the model to have a low loss value and a high validation value with the training/validation data will be a challenge. Another challenge will be to create enough training data for the model to use effectively.

References

Busteed, D. (n.d.). *Build a Handwriting Recognition App with Python, Tensorflow, and Flask*. Retrieved from <https://www.youtube.com/watch?v=lpWlf-iH7DA>

Purwoko, P. (n.d.). *How To Deploy Digit Recognition Model Into Drawing App*. Retrieved from Analytics Vidhya: <https://medium.com/analytics-vidhya/how-to-deploy-digit-recognition-model-into-drawing-app-6e59f82a199c>