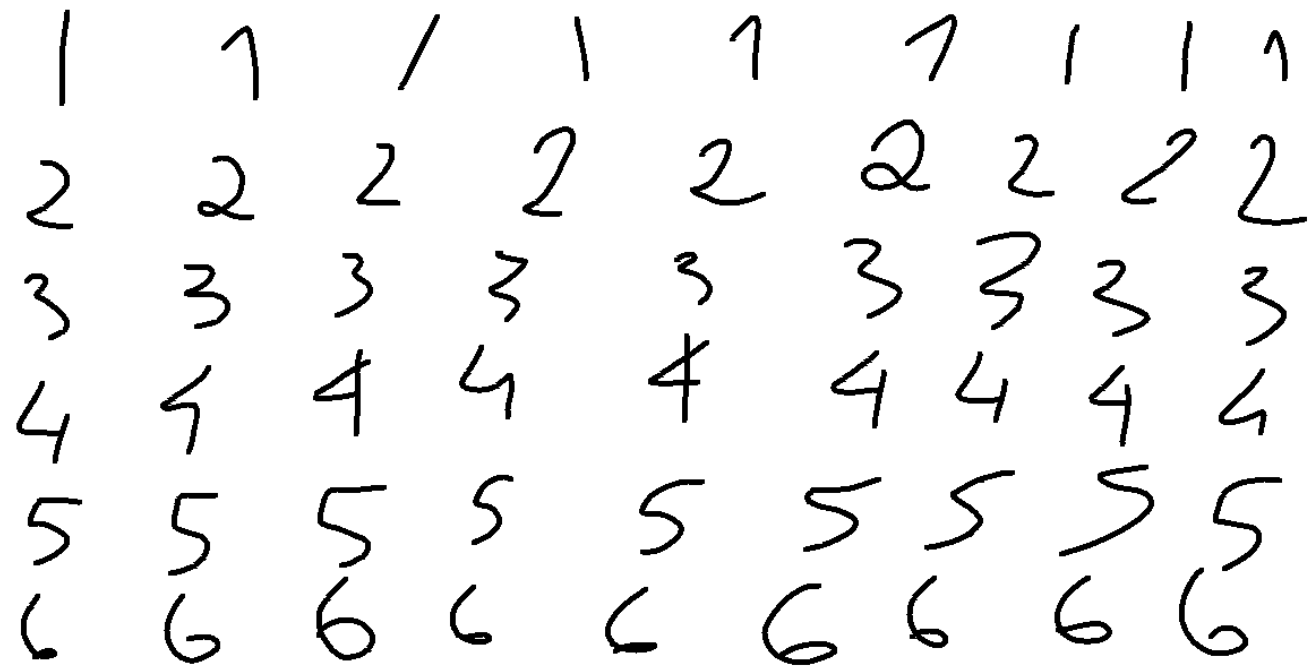


MNIST Digit Recognizer

MORGAN BAKER

Introduction

Handwritten digits



MNIST Dataset

A dataset created by the National Institute of Standards and Technology

There is a list of methods that have been used.

Concept

Taking the data and trying to get the lowest error

Background

There have been many attempts to make an accurate model

<http://yann.lecun.com/exdb/mnist/index.html>

Methodology

Use a convolutional neural network to read the digits

Convulsional Neural Network

Neural Networks for Images

Three layers

- Convolutional
- Pooling
- Fully Connected

In the case of the MNIST data...

The first layer takes the image and makes a 5 x 5 grid.

Layer 2 pools the grid to a size of 2 x 2

The final layer has 10 neurons to give the 10 different possibilities

Testing and Hypothesis

The goal is to have a error rate of $>2\%$

K Nearest Neighbors unfortunately does not meet that goal