

CAR PLATE DETECTION

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ABOUT THE PROJECT

Dataset contains images with bounding box annotations of the car license plates within the image. The goal is to create a detection model to localize the car licence plate



PROBLEM WITH ANN SOLUTION

Too many parameters

Over 100 000 for tiny 28 by 28 pixels

Not universal

Will work only on very similar, centered images

Costs

Lose all 2D information by flattening out the image

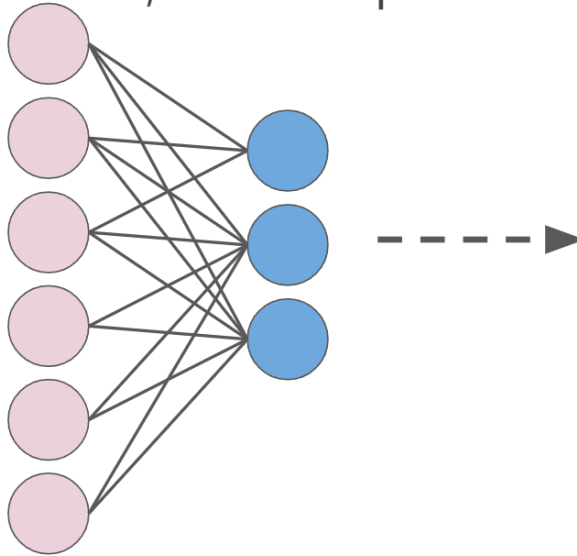
Purpose

Just not meant for dealing with images

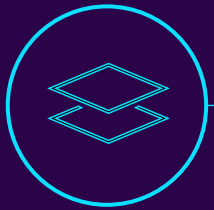


Deep Learning

- Fully Connected, lots of parameters!



CNN APPROACH



Convolutional layers

Use convolutional layers to help alleviate all these issues

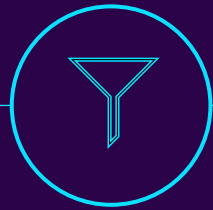


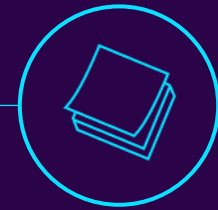
Image filters

Apply multiple image filters to the input images



Optimization

Add pooling and dropouts



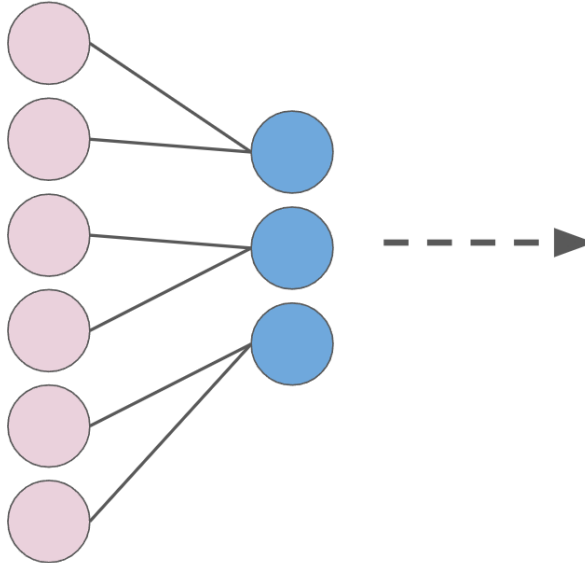
Easy to use

The layer will then be trained to figure out the best filter weight values



Deep Learning

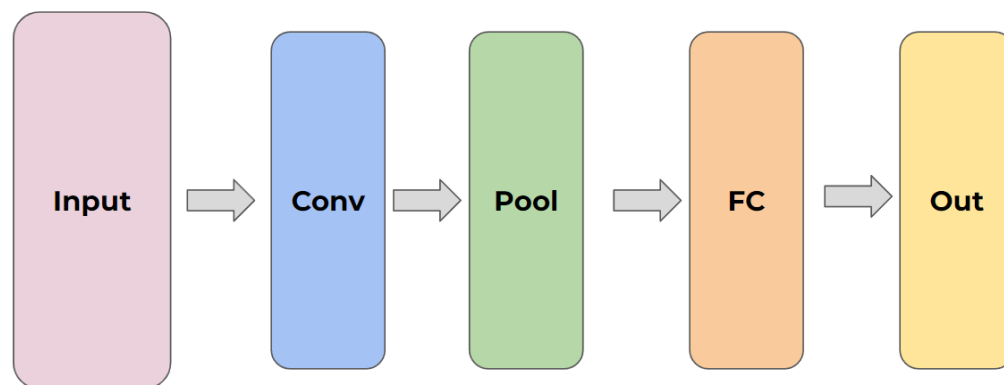
- CNN - Localized Connections





Deep Learning

- CNNs can have all types of architectures!



PRODUCT OVERVIEW



Police patrol

Quickly catch the suspect



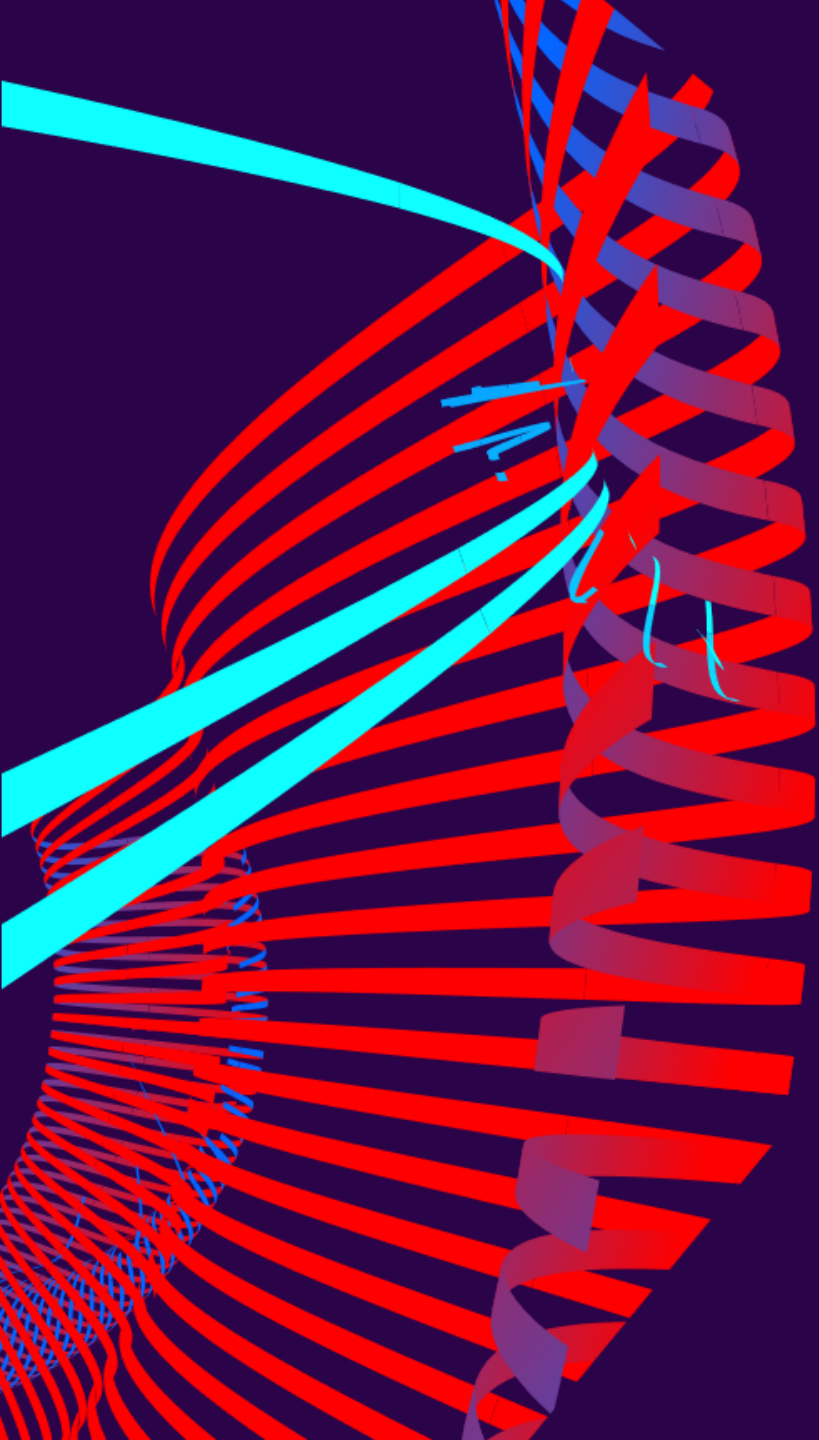
Reckless drivers

Inform of undercover cops nearby



Tolls

Automatically collect money at
parkings, highways



TOOLS OVERVIEW

LIBRARIES



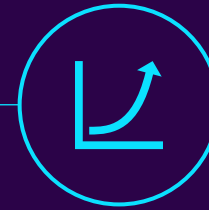
Numpy

Mathematical functions



Pandas

Data analysis



Seaborn

Statistical data visualization

LIBRARIES



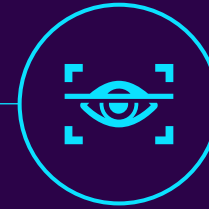
SciKit-Learn

Machine Learning tools



Tensorflow

Deep Learning



OpenCV

Computer Vision

THANK YOU

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