**282893 Advanced Machine Learning report**

**Task 1: Spam Detection** [task1 main.py](task1%20main.py)

Theory and Preprocessing

Fhsdluhdsf

Results

Fdskjbfg

Failure cases and potential biases

Gdsgsggsdg

**Task 2: Face Alignment** [task2 main .py](task2%20main%20.py)

Theory and Preprocessing

There are several elements of unprocessed images that may cause overfitting and a decrease in accuracy. The ideal data to train from would be gradient lines from grayscale images that are unobstructed and have no background. Using feature detection to remove the background is paradoxical, so the only preprocessing is grayscaling and application of the convolution kernel.

I’m using a Convolutional Neural Network to detect feature position. It was between this and SIFT, given SIFT has a natural resilience to rotations and varying contrast. However, using SIFT requires one or several templates, and this would be too computationally expensive to run for every single test image. This means I’ll be using a CNN, due to its advanced feature extraction.

Results

Fdskjbfg

Failure cases and potential biases

gdsgsggsdg