ML Assignment 2 Report

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**Machine Learning Algorithms considered**

The task was to develop two machine learning models that take an image of a cell as input. One model is required to accurately predict if a cell is cancerous, and the other model can predict the type of cell. Initially both models were approached in a similar way. We began by developing a base model using a traditional neural network. From this we expanded on each model with VGG deep neural networks.

**Why approach was selected?**

The traditional neural network was used to begin with to establish a base level of accuracy. The aim was then to build on this with more complex models and to ultimately achieve a greater accuracy. VGG was used because it is one of the most-used image-recognition architectures.

**Evaluations of the performance**

The base model for detecting if a cell is cancerous performed extremely well for a traditional neural network, where I was expecting the model to be close to 50% accurate it instead was 86% accurate. The VGG model when first attempted was overfitting a lot, leading to an accuracy that was similar to the base model at 88%. Changes were made to the model such as … to reduce this.This worked and the model was no longer overfitting bringing the accuracy up to 90% this is an improvement on the base model and is a reasonably high level of accuracy for relatively simple to implement neural network

**Ultimate judgement with analysis and evidence and independent evaluation (comparing to outside material to analyze how it would go in a real world setting**