Minute of Project Supervision Meeting

Student Name:	Martin O'Donnell		
Project Module Code:	CSC4006		
Project Supervisor:	Jesus Martinez Del Rincon		
Meeting Number:	3.30	Date of Meeting:	15/10/2019

Progress since the last meeting, and decisions arrived at during the meeting:

- Setting up recurring meetings on Tuesdays. These are not mandatory but a time slot in which I can use to talk about the project in person. Martin is to email if the meeting is not needed
- Discussed Jesus' role as supervisor. Not to lead but to point when needed.
- Talked about current problems, how accurate we should be. The aim of the project is to generate as many tags for a vehicle (Make, model, type) as possible and get it working for fine grain images (Real-world such as CCTV)
- Talked about how to read papers. Start with abstraction, read results then decide if it is worth reading the full one. Also points on how good papers are. How big is the dataset, how do they display results, are the results any good, do they talk about other approaches
- For the implementation, any implemetation language is acceptable.

Action Points:

Read around the problem from existing papers to find out how they do it. Read the abstraction and results to get an idea of the problem. Can look at CNN and come up with some results if I have time

Date of next meeting:

22/10/2019

Agreed minute should be signed by the student and initialled by the supervisor.

Student's Signature: _____ **Date:** _____

Supervisor's Initials: _____JMR_____ **Date:** _____

Supervisor's Comments:

Minute of Project Supervision Meeting

Student Name:	**Martin O'Donnell**
Project Module Code:	**CSC4006**
Project Supervisor:	**Jesus Martinez Del Rincon**

Meeting Number:	**3.30**	**Date of Meeting:**	**29/10/2019**

Progress since the last meeting, and decisions arrived at during the meeting:

Action Points:

Went over what a convoluted neural network was:
1. Convolution layer applies filters/kernels across layer before with pre-set weights
2. The linear non activation layer is used to reduce overfitting
3. Max Pooling layer used to down size the input from the previous layer. It uses windows sizes to do this. A common one is 2x2 with max pooling instead of average pooling
4. This is repeated until a fully connected layer is added to allow the network to allow the model to make predictions on the input images
5. Talked about models in use such as VGG16/RESNET.

Date of next meeting:

Work on finding papers related to CNN that are similar. Work out why they are related and their advantages/disadvantages. Find a couple of clusters ending with what I will do for my project
Work on implementing the Stanford dataset on VGG16 and my own model

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Minute of Project Supervision Meeting

Student Name:	**Martin O'Donnell**
Project Module Code:	**CSC4006**
Project Supervisor:	**Jesus Martinez Del Rincon**
Meeting Number: **3.30**	**Date of Meeting:** **14-1-2020**

Progress since the last meeting, and decisions arrived at during the meeting:

Shows Jesus my first couple of training results in text format. He asked for it to be visualized.
I am getting overfitting when training the basic VGG16 model on the Stanford cars dataset.

Action Points:

Train a model on high resolution data and then low and see if it improves on just training it by itself
Try remove overfitting on the model trained on the stanford cars dataset

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Minute of Project Supervision Meeting

Student Name:	Martin O'Donnell		
Project Module Code:	CSC4006		
Project Supervisor:	Jesus Martinez Del Rincon		
Meeting Number:	3.30	Date of Meeting:	18-2-2020

Progress since the last meeting, and decisions arrived at during the meeting:

Showed off results from the last weeks
- Multitask learning calculating predictions for make,model and submodel. The features vector from model and 3 classifications are input into the final fc layer giving a testing prediction of 81.35%. (Model 43)
- Augmentation methods give an testing accuracy of 82.38%. Added noise and changed colour

Explained testing,training and validation datasets. Should be looking at changes in validation data when hyper parameters are changed and hope it translates to better testing. I was fitting my dataset to testing dataset.

Action Points:

- Check results to see if changes in hyper parameter improved on the validation accuracy instead of testing
- Run the more classification multitask learning approach. Get prediction for make,model and submodel, then concatenate and work out loss from this and real label
- Can the precision for each class be recorded to find classes that are more prone to wrong predictions

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Student Name:	**Martin O'Donnell**		
Project Module Code:	**CSC4006**		
Project Supervisor:	**Jesus Martinez Del Rincon**		
Meeting Number:	**3.30**	**Date of Meeting:**	

Progress since the last meeting, and decisions arrived at during the meeting:

Still have overfitting in model. Talked about adding dropout
Jesus give me a report from last year to understand the structure of the two reports I will need to generate

Action Points:

Add dropout to model to help with overfitting
Read through the reports

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Minute of Project Supervision Meeting

Student Name:	**Martin O'Donnell**
Project Module Code:	**CSC4006**
Project Supervisor:	**Jesus Martinez Del Rincon**

Meeting Number:	**3.30**	**Date of Meeting:**	**28-1-2020**

Progress since the last meeting, and decisions arrived at during the meeting:

Shows off results from this week
- Got best accuracy after one result. Jesus pointed out that the learning rate was very high so I will work on that. May help with the overfitting
- Will also add augmentation to data to see how it improves accuracy

Talked about how resolution can affect accuracy
- We could blur the testing set to see how it copes with lower resolution
- We could reduce the stanford cars dataset to add more data to the boxcars

Jesus give an explanation of different layers in a neural network,mainly about max pooling and how they affect dimensions

Give back Nialls report

Action Points:

Will work on changing the learning rate during training and more work on the architecture to try remove overfitting

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Student Name:	**Martin O'Donnell**		
Project Module Code:	**CSC4006**		
Project Supervisor:	**Jesus Martinez Del Rincon**		
Meeting Number:	**3.30**	**Date of Meeting:**	**24/3/2020**

Progress since the last meeting, and decisions arrived at during the meeting:
Started working on the multitask learning models. Created the loss function to model relationships between the fine-grain labels. Also working on other networks such as channel max pooling and spatially weighted

Action Points:

Continue work on the multitask neural network. Jesus talked about reconstructing the labels from the separate predictions so will implement that. This will allow a comparison to be made between each approach.

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Minute of Project Supervision Meeting

Student Name:	**Martin O'Donnell**
Project Module Code:	**CSC4006**
Project Supervisor:	**Jesus Martinez Del Rincon**
Meeting Number:	**3.30** **Date of Meeting:** 3/4/2020

Progress since the last meeting, and decisions arrived at during the meeting:
Finished multitask network and nearly completed auxiliary networks. Started dissertation. Not much luck with the channel max pooling layers. Takes a long time to train a network.

Action Points:

Finish auxiliary learning and keep writing the dissertation. Will keep working on improving the channel pooling network. More experiments will be ran for the fine-to-coarse grain knowledge transfer section to see how a limited datasets performs when finetuned from the cars-196 dataset

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Student Name:	**Martin O'Donnell**		
Project Module Code:	**CSC4006**		
Project Supervisor:	**Jesus Martinez Del Rincon**		
Meeting Number:	**3.30**	**Date of Meeting:**	**14/4/2020**

Progress since the last meeting, and decisions arrived at during the meeting:

Nearly finished dissertation. Started the software development report as have finished implementing the system. Results are mostly in. Just a few more experiments to run on the auxiliary learning section.

Action Points:

Will send dissertation off on Thursday for first draft and keep working on the system development report

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Minute of Project Supervision Meeting

Student Name:	**Martin O'Donnell**
Project Module Code:	**CSC4006**
Project Supervisor:	**Jesus Martinez Del Rincon**
Meeting Number:	**3.30** **Date of Meeting:** **21/4/2020**

Progress since the last meeting, and decisions arrived at during the meeting:
Worked on the system development report. Spent the meeting going over the first draft of the dissertation.

Action Points:

To finish second draft of dissertation and send of back to Jesus for review

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Supervisor's Comments: