Individual Project Report

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Certificate:	Graduate Certificate in Pattern Recognition Systems

1. Your personal contribution to the project.

We had set out to complete three tracks within our project. Within each track, we identified a member to be the track lead while other team members supported.

I had led the track of fashion article generation, and conducted the end-to-end process of data cleaning, model creation/training/fine-tuning, and deployment of model to webapp. Chandra had supported by writing a webscrapper to scrap raw images off e-commerce sites. I researched on various GAN models and implemented the model creation and training codes in jupyter notebook. I also customized the GAN loss to introduce symmetry in the generated images, this is specific to our use-case of fashion article generation.

I had written the webapp frontend (using HMTL/CSS/JS) and backend (using python-flask) for the project. I had structured the webapp backend codes so that it was modular, allowing my teammates to easily insert their DL models into the webapp.

From the project management aspect, I had driven the project by setting up deadlines, calling for milestone meetings, and contributed to setting the scope of each of tracks. I had setup the structure, flow, and components within the project report, so that my teammates could easily plug in their parts.

2. What you have learnt from the project.

Deep learning model, especially something as complex as GAN, was definitely unfamiliar terrain for me. It was a sharp learning curve to leap from being a novice in deep learning, to implementing/deploying GAN models. But all of which was immensely rewarding as I had learnt a lot of new techniques in the process.

I acquired much new knowledge in this project. From the onset of data cleaning, I acquired new know-hows such as using OpenCV-Grabcut, pretrained face-detection models, etc. During the model creation and training phase, I had a lot of practice using Keras-Tensorflow and build many deep learning models. The greatest satisfaction was after detailed understanding of the GAN model, I was able to successfully formulate, customize, and implement my version of the loss function to account of asymmetrical images. I deeply appreciate the approach of experimentation and trial-and-error when building deep learning models.

3. How you can apply this in future work-related projects.

Learning and implementing a complex DL model such as GAN definitely built up a strong foundation for me to explore other DL model.

The experienced gained from using keras-tensorflow would greatly aid in future work or school project. Furthermore, the ability to implement the app end-to-end (from training the DL model, to developing the web backend and frontend) gave me the experience of being a full stack developer. This exposure to the diverse roles within app development was beneficial and enriching.