Before I mention the ML skills that I would like to develops, I want to be able to understand the ML language and terminology first. Because there are some new languages and terminologies for ML that I don’t understand what those words mean. I know and understand a little bit around statistic, but I have to refresh my memory around this since it’s been a long time since I use it. I would love to be comfortable and understand the ML language and terminology by the end of this course so I can apply them correctly or at least know when and how to use it. And here are the three ML-related skills that I would like to develop throughout the ML fortnights:

1. Create Data Modelling

How to design the ML models that are inclusive, fair and unbiased. There were so many unfair treatments happen to people because of ML algorithm. For example, the story of [Joy Buolamwini](https://www.ted.com/talks/joy_buolamwini_how_i_m_fighting_bias_in_algorithms/transcript?language=en#t-504838) about gender and skin-colour bias in facial recognition ML. The machine could not recognise her face at all, only when she put a white mask on or ask her white female friend to test that’s when the machine recognise there’s a face/person.

I don’t have knowledge or capabilities in this skill today and I want to develop capability in designing an inclusive, fair, and unbiased ML model to help other people. I want to be able to make a good ML model by the end of the course from any given dataset examples (i.e., the zoo, coffee, and any other dataset) or at least able to identify which model is good or bad and how to amend it.

1. Explain and Tuning the ML model

How to explain the model decision and to becoming familiar with explainable AI principles to hold us more accountable, how to ensure that the ML is making the right decision for the right reason. For example, in making decision for recruitment process, [Amazon’s case](https://www.theguardian.com/technology/2018/oct/10/amazon-hiring-ai-gender-bias-recruiting-engine) where it favoured men over women because they use the past 10 years resumes submitted to Amazon which was dominated by men. Instead of hiring people because of the knowledge and experience fit. More importantly how to fix/amend these issues if possible or replace the model.

Also, using the full spectrum training set, I would like to be able to tune the model, find the sweet spot and avoid the overfitting or underfitting model by balancing between the bias and variance in the data, as well as the trade-off for each of them, by the end of the course and beyond.

1. Apply the ML model for evaluation and quality control

I would like to gaining sufficient familiarity with each process in a practical ML pipeline. So, I know how to effectively choosing a suitable model to fit the type of data that we use and evaluating the model is by training, testing and validating the model. Few years ago, I tried to use Data Robot and SAS VA for machine learning which created the ML model automatically from the data provided, but I never use python codes to apply the ML model for the evaluation and quality control of the model. I’m hoping to be able to apply the evaluation and quality control for the ML model by the end of the course and beyond.

I think these skills will help me work towards my goals which is learning new things and able to apply those learnings to help others. My immediate (short-term) goal will be for the CPS project and my long-term goal will be for my future workplace. Given my working background in the financial banking industry with big data, I can leverage and apply my ML learning skills to help shaping the decisioning making process with the ethical AI as the fundamental anchor and responsible practice in banking or any other area in future.

I’m not sure if these skills will complement or overlap with the other cohort skills because I don’t know what they want to develop around the ML skills specifically. But I know the fact that we have such a diverse background, experience, interest and learning process. So, I believe that my skills can complement the other cohort’s skills and together we can help each other for the CPS project in semester 2 and beyond as the future NBE practitioners.