Week 6 Reflection

**What have I learnt this week?** This week I learnt about mainly how complex systems evolve. The different complex systems that were explored and learnt in this workshop include Markov models, Random walk models as well as broadcast, diffusion, and contagion models.

**What do I 'now know' that I did not before?** Now I know what the definition of Markov Models, Random Walk Models as well as broadcast, diffusion, and contagion models. I know now all of these models links to the evolution of complex system models. A Markov Model is a model that is used to model systems that randomly change. I now know that Random Walk Models are models where in it assumes that a certain variable takes a random independent movement away from the previous value. I now know that broadcast models are models that express different ideas or information through different media such as the radio or television etc.

**What insights have I gained?** One of the major insights I have gained is these models can be used to real world scenarios. For example Markov models can be used to suggest probabilities of alert vs bored students and an example of Random Walk models is whether a monkey can do just as well in the stock market as a technical analyst? An example of broadcast models is a television channel that shows a Prime Minister presenting a speech on television.

**What are (my/the) perceived strengths and weaknesses that I have observed?** One of the perceived strengths that I observed is I understood broadcasting models well. This was a perceived strength because just like many people in the world, I watch television where different shows are broadcasted on it.

In terms of the modelling group assignment, one of the strengths that I have observed is the ideas that were collected for our topic which is COVID-19, were very good. This is mainly because our group had good communication and teamwork skills.

One of the weaknesses that I observed during the workshop is understanding the significance and meaning of Random Walk Models. This is because I haven’t learnt about random walk models and is a new concept.

**What were the challenges I have encountered/observed and how well (did I/my team) handle them?** As mentioned above one of the major challenges that I encountered is understanding Random Walk Models. Understanding random walk models was handled well although it did take some time to completely understand the models. Random Walk Models took the longest time to completely understand in comparison to all models throughout the course so far. I handled the situation by doing extensive research.

**What would I do better next time and with what anticipated results?** One of the things that I could have done better next time to understand Random Walk Models is to do research before the Workshop started. This would allow myself to understand Random Walk Models better but also make myself learn Random Walk Models is a quicker time.

**What theory proved to be useful and why? What have I learnt from this?** The theory that proved to be the most useful is understanding the benefits of each of the models. By understanding the benefits of each model has allowed me to learn its significance in the evolution of complex systems. For example I have learnt that the benefit of Markov models is its flexibility as it can be applied to many situations.

The other bit of theory that proved to be useful is the examples that are given with each of the models. This bit of theory is important as it allowed myself to gain a better insight into the effectiveness and the use of the models that were studied in this workshop.