

# Week 1 Reading

Si Kai Lee sl3950  
September 13, 2016

This chapter proved to be a harder read than expected as there were so many new ideas that I have not encountered before. It was really cool to see the link between Equations 2.1 and 2.2 in for directed graphical models and see that directed graphical models can be factorised as sets of conditional independence relationships. I have seen Figures 2.5 and 2.6 in papers before and it was only until now that I realised that they belong to the three canonical models. I'm pretty excited to see the proof that Jordan mentions for  $D_1$  and  $D_2$  from section 2.1.3. I thought that the method of parameterising undirected graphs using potential functions was really intuitive as it would be hard to disentangle the causal effects of such graphs and exponentiating potential functions to obtain probabilities is such a no-brainer. Now I see why factorisation is a more general concept compared to conditional independence.