Week 5 Reading

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October 11, 2016

Although this week's reading was less mathematically intensive., it solidified some of my understanding of statistics in general, especially with regards to kernel density estimation which I keep seeing. I found Chapter 5 to be quite illuminating in terms of expounding on the difference between Bayesian and Frequentist statistics and I believe that there are merits to both depending on the situation. I also found the discussion about parametric and non-parametric models (which was elucidated very well with the mixture models example) to be really interesting, to quote 'In sum, if we are willing to make more assumptions then we get faster convergence, but with the possibility of poor performance if reality does not match our assumptions'. Jordan's description of different graphical models applied to density, regression and classification was also great but I am not sure the advice of not having more than 3 layers in a Bayesian hierarchical model still holds given the use of >3 layers in recent literature. However, I concede that it might still hold for hyperparameter selection with Bayesian optimisation. Both readings hinted strongly that model development, selection and validation are the main problems in statistics these days and one should focus on such problems instead of arguing over the validity of the Bayesian and Frequentist point of views.