Jomaica Lei
OMSBA 5068 – Seattle University
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How much time did you spend on the assignment?

15-24 hours – because I have to watch all the videos first before starting the assignment as well as install the new library – pomegranate which I had trouble installing.

Were there aspects of the assignment that were particularly challenging? Particularly confusing?

Trying to download the library, pomegranate took me quite some time. I troubleshoot for a few hours, since I use the built in jupyter extension on VS code for our previous assignments, this time I could not install the pomegranate library, I even tried both previous released version 0.14.8 and 0.14.9 but still unsuccessful. I read somewhere on github that there was a bug with the 0.14.8 release and was only compatible with the python version <= 3.8 and that seemed to be true because I was using the version 3.10 and I was only able to install versions >= 1.0.0 but got an error: 'NameError: name 'DiscreteDistribution' is not defined' SO I finally gave up and just used Collab Research on google and that seemed to work just fine.

Also, in the file alarm.ipynb, cell 5, I got confused by the question since it is tricky, I actually tried to compute the probability of both alarm and burglary given that both John and Mary called, but after realizing this, there can't be two probability since the belief state for 'Burglary' will be conditioned on the alarm going off and the calls from both John and Mary as evidence. Therefore, I only looked at the probability of a burglary in this scenario (conditional probability). However, after getting the output, ("+b" : 0.2841718353644582, "-b" : 0.7158281646355419) It seems that even given the alarm, (implied by John and Mary calling) there is still a significant chance that no burglary occurred, reflecting the uncertainty and the influence of other factors like the possibly of an earthquake or a false alarm.

What were the main learning take-aways from this lab – that is, did it change your understanding of what AI is? Did it introduce particular concepts or techniques that might help you as an analyst or engineer or AI specialist in the future?

I really enjoyed this lab, especially the alarm network assignment. The lab highlighted the strength of Bayesian networks in dealing with complex problems where various factors are interrelated, such as in the Alarm Network scenario. Learning to interpret and manipulate these networks has enhanced my analytical skills, particularly in the areas of probabilistic reasoning and conditional probability. The hands-on experience with the pomegranate library has also given me a practical tool that I can use to implement Bayesian networks in future projects.