**1. Inference & Graphical Models**

**a)**  p(**x\***, y\*, **θ**, X, **y**) = p(y\*|**x\***, **θ**) • p(**x\***) • (Πn p(yn|**xn**, **θ**) • p(**xn**)) • p(**θ**)

**b)i)**  p(**x1**, y1, **x2**, y2, **θ**) = ∫∫ p(X, **y**, **θ**) dX{i ≠ 1,2} d**y**{i ≠ 1,2}  (marginalise)

= ∫∫ (Πn p(yn|**xn**, **θ**) • p(**xn**)) dX{i ≠ 1,2} d**y**{i ≠ 1,2} • p(**θ**) (condition)

= Πn ∫∫ p(yn|**xn**, **θ**) • p(**xn**) d**x**{i ≠ 1,2} dy{i ≠ 1,2} • p(**θ**) (independence)

**c)**  holds: iii), vi), viii)

**d)i)** p(**θ**|**y**) = ∫ p(**θ**|**y**, X) • p(X|**y**) dX

**ii)** p(**θ**|**y**, X) = (Πn p(yn|**xn**, **θ**) • p(**θ**)) / (∫Πn p(yn|**xn**, **θ**) • p(**θ**) d**θ**)

**iii)** p(X|**y**) = (∫Πn p(yn|**xn**, **θ**) • p(**θ**) d**θ** • p(X)) / (∫∫Πn p(yn|**xn**, **θ**) • p(X) • p(**θ**) d**θ** dX)

**e)**

Helpppppp 🙁

How is everyone finding the past papers? Do you all feel prepared?

Definitely NOT feeling prepared lol... hard ass exam!!!

Well, Deep Learning ate a lot of my time, so I didn’t have time for practicing for this exam...RIP

Same haha. Deep learning and decentralised finance, only for DeFi to be so easy that I regret spending so much time smh

Big Rip, hopefully Mark doesn’t kill us tomorrow (Already dead)

Famous last words

I am truly, utterly f\*\*\*\*\* samesies

Why I am taking Inference even after MML exam????? Huhhhhhhhh

~Because we’re masochists 😉

Don't hesitate to put some ideas here ahahah hehe

\*cries in gaussian process\*

When is the exam resit? Are there resits for these exams thought it doesn’t matter in 4th year if u pass individual courses

Hahahaha, fuck, this is the first exam that I will likely need to resit smh godammit.

pain