**Sareh Kouchaki – Section 2**

**Statistical-Modeling-II**

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Exercise 2.1:

The likelihood can be written in this form:

Conjugate prior:

Posterior:

\*\*

\*\*explain how we got this?

So,

Exercise 2.2:

Exercise 2.3:

Marginal distribution over

https://ipfs.io/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/Student's\_t-distribution.html

Under the integral is the kernel of gamma ( distribution

where .

So,

T distribution:

Exercise 2.4:

Marginal Posterior Distribution over

Under the integral is the kernel of gamma ( distribution

where .

So,

T distribution:

Exercise 2.5: