Lab - Day 2

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Pick a conjugate model of your liking, so that you can compute posterior quantities without MCMC, and therefore you can do some simulation work in a short amount of wall time.

If possible, the following may be more interesting if you have a setting where the frequentist coverage of a Bayesian credible interval does vary a bit across the parameter space.

- Verify by simulation that the Bayesian coverage of the credible interval is as advertised.

- Verify by simulation that the average squared error of the poterior mean (in the sense of jointly sampling parameters and data) worsens as the prior used to form the posterior (the investigator's prior) deviates from the distribution used to sample parameter values (Nature's prior).