STAT 830 Lecture 6
Fall 2018
20 September 2018

- We covered slides 1-21 of "Likelihood".
- Next Tuesday I will try but fail to finish "Likelihood".
- I did three little experiments: dropping a thumb tack, spinning a loonie, and flipping a loonie. In each case I had 5 replicates. The point was to illustrate the fact that they problems are treated in classical frequency theory as all being the same but that they differ because in one case you know quite a bit about coins. In the coin spinning case you might think you know lots but Persi Diaconis and colleagues have investigated and in the case of older US pennies found that the engraving on the faces of the sides of the coin causes one side to be much more common than the other.
- I showed you pictures os likelihood, log-likelihood, and score functions for samples of size 5 and 25 from the Cauchy distribution with unknown location.
- I discussed the fact that the plots show predictable structure near the true parameter value (which was 0 for the data sets I generated).
- The plots are far less predictable far away from the true value. The score equations can have multiple roots.
- I discussed the Binomial(n, p) model and noted that for $0 < X < n$ the likelihood equations have exactly 1 root while for $X = 0$ or $X = n$ they have no roots.
- There are no handwritten slides for this lecture.