COLLOQUIUM

MIAMI UNIVERSITY
Department of Statistics

presents

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Interval Estimation for Proportions and the Implementation in R

Abstract

Interval estimation for proportions is a basic problem in statistical inference, and is widely used in statistical practice. In this talk, several related parameters are of interest: a single proportion, an unknown population size, the difference of two proportions, the relative risk and the odds ratio. For the case of large sample, we investigate commonly used intervals, including the Agresti-Coull interval (1998), and show that they all have an incorrect asymptotic confidence coefficient. i.e., no matter how large the sample size is, the chance of capturing the parameter may still be much less than the nominal level. A concept of uniformly approximate interval is proposed. We also show that the infimum coverage probability of any bootstrap confidence interval for proportions is zero for any sample size. For the case of small sample, the construction of smallest one-sided intervals and admissible two-sided intervals is discussed, as well as the implementation in R.

Thursday, September 5, 2013
4:00 p.m. in 312 UPH
Refreshments will be available in 309 UPH at 3:30p.m.