SPENCER WOODY

spencer.woody@utexas.edu
+1 (832) 369-9168
spencerwoody.github.io

RESEARCH INTERESTS

I am interested in problems of post-selection inference (POSI). While there has been a lot of work done on problems of sparse signal identification and variable selection, post-selection is an area of statistical research which has only recently gotten attention and is becoming increasingly relevant in a world where data are large, and statistical analyses are often conducted after exploring the data. So far I have worked on POSI problems in the sparse normal means problem and spatial signal detection, but I also hope to extend this methodolgy to heterogeneous treat effects and variable selection.

EDUCATION

The University of Texas at Austin (2016 – present)
PhD, Statistics. (In progress)

Duke University (2011 – 2015)
BS, Economics & Statistical Sciences (dual degree).

Summary of research to be presented
In spatial modeling it is often of interest to detect "hotspots," or regions of anomolous signals. Once these signals have been detected, a natural follow-up question is how to provide confidence regions for signal intensity accounting for selection bias, sometimes referred to as the "winner's curse" or the "look-elsewhere" problem. In our work we use the selection-adjusted Bayesian inference approach from Yekutieli (2012). The main difficulty lies in computing the probability of the selection event occuring in order to calculate the selection-adjusted posterior. We present an approximation to this selection probability and then apply our method to a problem of evolutionary biology where the objective is to find geographic regions where a sparse set of genes are naturally selected for.

PROFESSIONAL MEMBERSHIPS

The American Statistical Association, since 2016.
The International Society of Bayesian Analysis, since 2018.

EMPLOYMENT

The University of Texas at Austin
Graduate Research Assistant for Eberlin Research Group. (2017 – present)
Graduate Assistant, Department of Women's Health, Dell Medical School (2017 – present)
Graduate Research Assistant, Professor Mike Daniels (2017)
Graduate Teaching Assistant, Statistics for Marketing. (2016)

Integra Research Group
Austin, TX
Data Scientist Intern (2017)

7-Eleven
Madison, WI
Assistant Store Manager (2015 – 2016)