

MATH4003 Assignment 2, due on Sept 20

- (1) Generate a sequence of random variables $X_i \sim N(0, 1), i = 1, \dots, n$ with $n = 50$, then you will get a value of the Wilcoxon signed rank statistics W . Repeating the procedure 1000 time, you will get 1000 W 's, plot the histogram, and then compare it with the histogram of 1000 normal random variables from $N(E[W], Var[W])$. Does the distribution X_i affect the result? Try the other distribution, for example $X_i \sim exp(1)$.
- (2) Using the idea of the first question, design a simulation study to assess the performance of normal approximation of the Mann Whitney U test.