



A test for Autocorrelation

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https://github.com/ST541-Fall2018/kuttyj_Autocorrelation-Check

- Most of the approaches we use need the data to be independent and identically distributed.(Random)
- Autocorrelated data violates these assumption of independence.
- How do you actually check if the data is random?

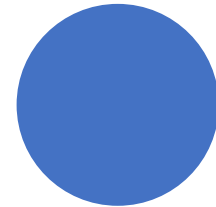
Motivation and Goal

- Assumption : Random Numbers internally will follow a uniform distribution between (0,1)
- It is a Z-test in the following manner:

$$rho = \frac{1}{M+1} \sum_{k=0}^M [R_{i+km} R_{i+(k+1)m}], E(rho) = 0.25 \text{ \& } Var(rho) = \sqrt{13M + 7} \div \{12(M + 1)\}$$

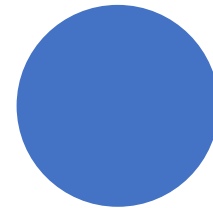
$$Z = (rho - 0.25)/Var(rho)$$

The Idea



- Input Parameters:
 - Numeric Vector (distribution unknown)
 - Lag
 - Sub setting Index.
 - Two-sided alpha
- Output:
 - P-value
 - My Interpretation of the hypothesis.

The
Function.(Autocor_checker)





Thank You.