Stochastics Lab Course II

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Introduction

The "Stochastics Lab course II" is an Introductory Course for statistics and stochastics applications with R programming language. The course lasted for two weeks in March 2019. The report contains results, interpretations and figures from the ten exercises that had to be solved. Along with this report, there is also the R codes, which are recommended to understand the result.

Contents

Chapter 1

Tidyverse

1.1 Problem's description

1.2 Methods' description

1.3 Results' discussion

Chapter 2

Random number generation

2.1 Problem's description

2.2 Methods' description

Linear congruent generators: Give the algo/pseudo code. Give an exemple (with a fuul period), the drawbacks of the method. Talk a little bit about multiplicative congruent generator, then Mersenne twister. Inverse method: rejection method (Accept-Reject)

2.3 Results' discussion

Chapter 3

Bootstrap

3.1 Problem's description

3.2 Methods' description

Bootstrap: algorithm: Bootstrap confidence intervals:

3.3 Results' discussion

Chapter 4

Generalised linear models

4.1 Problem's description

4.2 Methods' description

4.3 Results' discussion

Chapter 5

Survival analysis

5.1 Problem's description

5.2 Methods' description

5.3 Results' discussion

Chapter 6

Kernel density estimation

6.1 Problem's description

6.2 Methods' description

6.3 Results' discussion

Chapter 7

Nonparametric regression: local polynomials

7.1 Problem's description

7.2 Methods' description

7.3 Results' discussion

Chapter 8

Nonparametric regression: splines

8.1 Problem's description

8.2 Methods' description

8.3 Results' discussion

Chapter 9

Mixed models

9.1 Problem's description

9.2 Methods' description

9.3 Results' discussion

Chapter 10

Partial least squares

10.1 Problem's description

10.2 Methods' description

10.3 Results' discussion