Linear Algebra and Differential Equations Project 1

Rayana Gottschall

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Abstract

[Write a brief summary of your project here.]

1 Part 1: Colley Method

1.1 Explanation

Colley's method is used to rank sports teams based on their win-loss ratio. The method was created by Wesley Colley to handle situations where teams may not have played each other an equal number of times.]

1.2 Laplace's Rule of Succession

Laplace's Rule of Succession provides a formula to relate observed instances to unobserved ones, formally reffered to as "enumerative induction." The formula for probability is (k+1)/(n+2). Where 'k' is the number of times an event has occured, and 'n' is the total number of trials. In sports ranking, Laplace's rule provides a more accurate probabilty result for small data sets by accounting for future outcomes. This is acheieved through the use of biases, +1 and +2. The bias also eases the jumps in ranking when the observed data, number of games played, is scarce.

1.3 Example Calculation

[Provide a sample calculation to illustrate the method.]

2 Part 2: Massey Method

2.1 Introduction

[Introduce the Massey method and its importance.]

2.2 Methodology

[Explain the approach and relevant equations.]

2.3 Example Calculation

[Show an example using the method.]

2.4 Results

[Discuss your findings from applying the Massey method.]

3 Part 3: Application to Real Data

3.1 Data Collection

[Explain the source and characteristics of the data you used.]

3.2 Implementation

[Discuss how you applied the Colley and Massey methods to the real data.]

3.3 Comparison of Results

[Compare the outcomes of both methods when applied to the data.]

4 Part 4: Cutting Edge

4.1 Overview of New Methods

[Summarize any novel or emerging methods in ranking.]

4.2 Application and Analysis

[Describe your research and analysis of the cutting-edge approach.]

4.3 Comparison with Traditional Methods

[Compare these new methods with Colley and Massey.]

References

[Include your references here in the format required by your institution.]