Lab 2 – MATH 240 – Computational Statistics

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Abstract

This document provides a basic template for the 2-page labs we will complete each week. Here, briefly summarize what you did and why it might be helpful. Provide all the top-line conclusions, but avoid providing *all* the details. Results should be limited to "we show X, Y, and Z."

Keywords: Music Analysis, String Manipulation, Batch Files

1   Introduction

In 2018, The Front Bottoms and Manchester Orchestra collaborated on a song entitled "Allen Town". Our goal in this project is to determine which band contributed more to the song by analyzing the music from both bands and comparing data from the new song to their respective collections. In this lab, we set up the code for processing each individual track, building a batch file containing the specific lines of code for each song that we can run to collect data using Essentia's executable file.

2   Methods

We began by utilizing tools from the `stringr` package for `R` to collect the names of tracks, albums, and artists (Wickham, 2023). We combined them to create unique names for each track's output `.json` file. We then utilized the `writeLines()` function to write a line of code specific to each track into a batch file. Lastly, we took the sample song Au Revoir (Adios) by The Front Bottoms and analyzed specific characteristics of the song with the `jsonlite` package for `R` (Ooms, 2014).

2.1   Methods Subsection

Much like the Introduction, subsections can be helpful for the Methods section. For example, you might describe data collection and the statistical analyses of the collected data in different subsections. Or, you may have different questions that require distinct methods.

3   Results

Tie together the Introduction – where you introduce the problem at hand – and the methods – what you propose to do to answer the question. Present your data, the results of your analyses, and how each reported aspect contributes to answering the question. This section should include table(s), statistic(s), and graphical displays. Make sure to put the results in a sensible order and that each result contributes a logical and developed solution. It should not just be a list. Avoid being repetitive.

3.1   Results Subsection

Subsections can be helpful for the Results section, too. This can be particularly helpful if you have different questions to answer.

4   Discussion

You should objectively evaluate the evidence you found in the data. Do not embellish or wish-terpet (my made-up phase for making an interpretation you, or the researcher, wants to be true without the data *actually* supporting it). Connect your findings to the existing information you provided in the Introduction.

Finally, provide some concluding remarks that tie together the entire paper. Think of the last part of the results as abstract-like. Tell the reader what they just consumed – what's the takeaway message?

Bibliography: Note that when you add citations to your bib.bib file *and* you cite them in your document, the bibliography section will automatically populate here.

References

Ooms, J. (2014). *The jsonlite package: A practical and consistent mapping between json data and r objects.* arXiv:1403.2805 [stat.CO].

Wickham, H. (2023). *stringr: Simple, Consistent Wrappers for Common String Operations.* R package version 1.5.1.

5 Appendix

If you have anything extra, you can add it here in the appendix. This can include images or tables that don't work well in the two-page setup, code snippets you might want to share, etc.