

Abstract

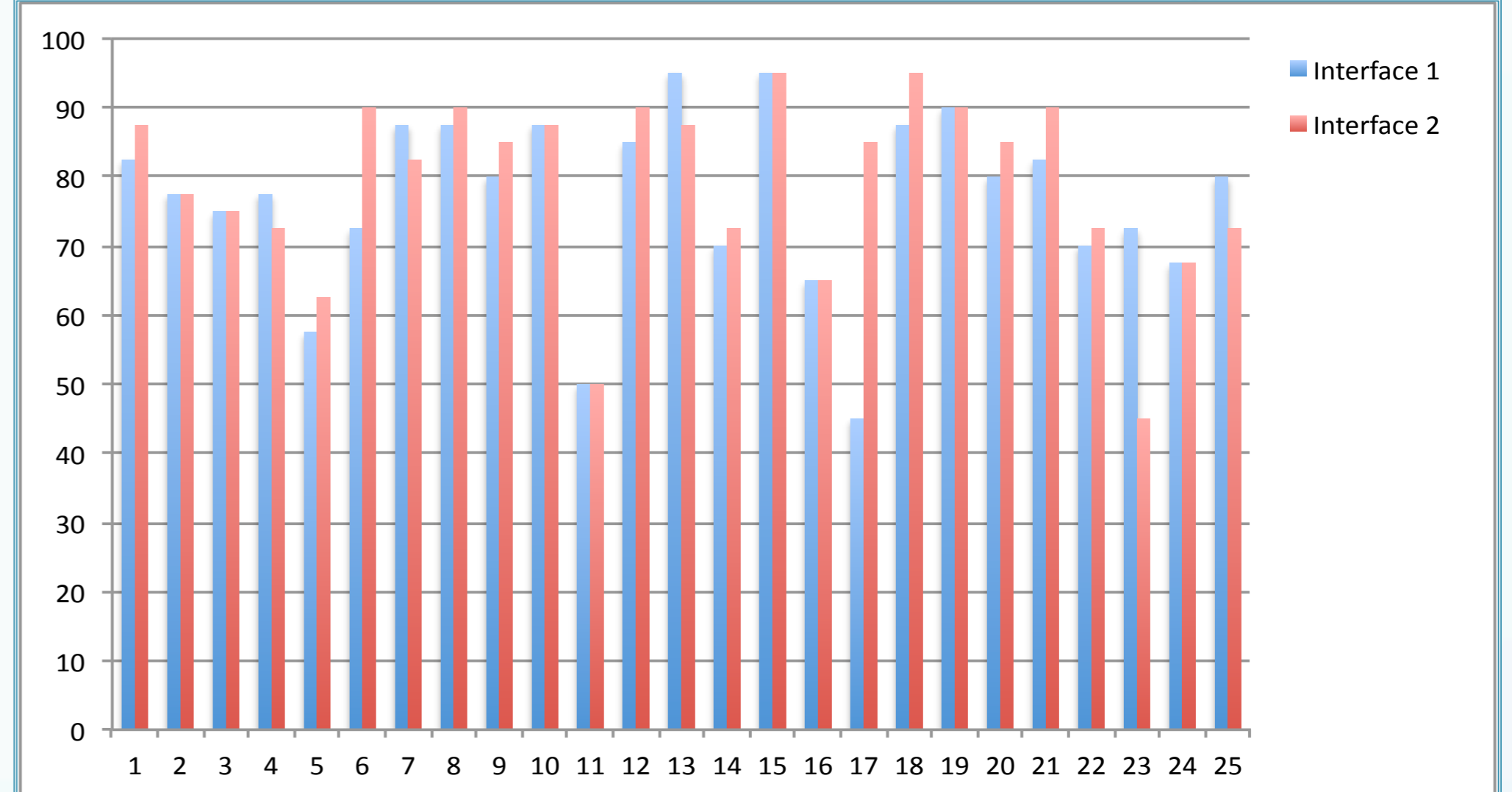
In this paper, I describe my current research in the field of interactive large public displays within a social environment. The core of my research is based on multiple user interface concepts and comparing them in a way to find which is most effective. StreamBot was created to test this. A system that can receive concurrent song requests through Twitter, process and compile them into a playlist that is played and shown on a public display. Research also included how effective and usable such a system would be. As a result of my research I found that StreamBot is a very usable system and scored highly in System Usability, regardless of the interface and design patterns used.

Introduction

The study's main goal were to find what layout factors encourage or discourage a potential user from using a public display for a shared music application and to find if such a system is feasible. To fulfill these goals, background research was carried out through informal user feedback and academic papers, creating and comparing multiple user interfaces and analysing results from testing.

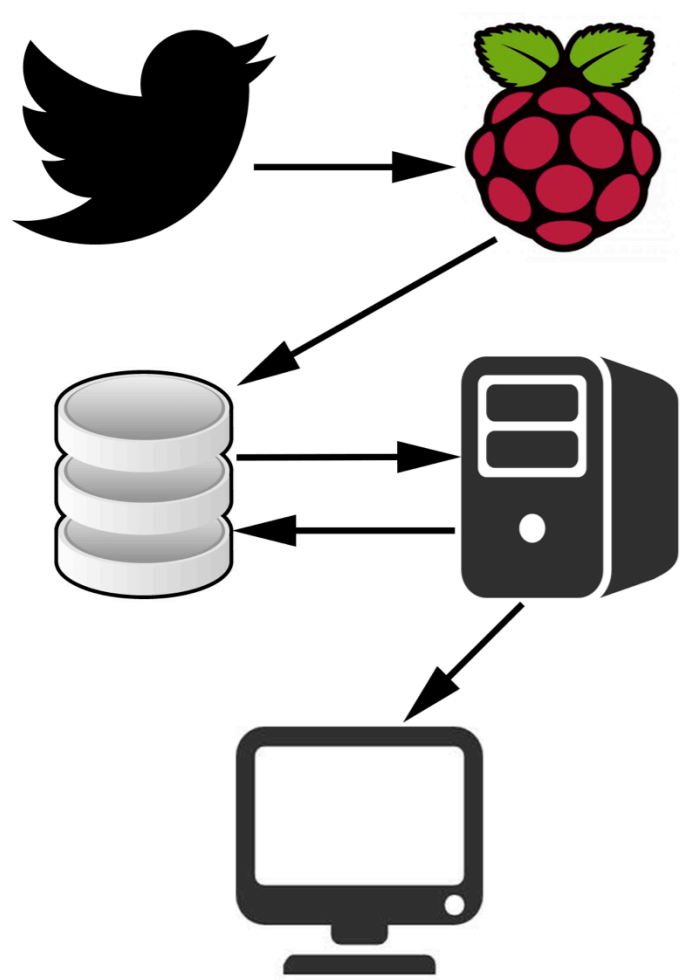
Results

Post-hoc tests revealed that, overall, average System Usability Scores fell into the 78th (Score - 76.8) and 85th (Score - 78.9) percentiles of the curved grading scale of SUS Scores (Sauro, Lewis, 2012). The graph below shows scores for both interfaces, both of which are well above the global mean score of 68, showing that participants of the study found both interfaces extremely usable and easy to use.

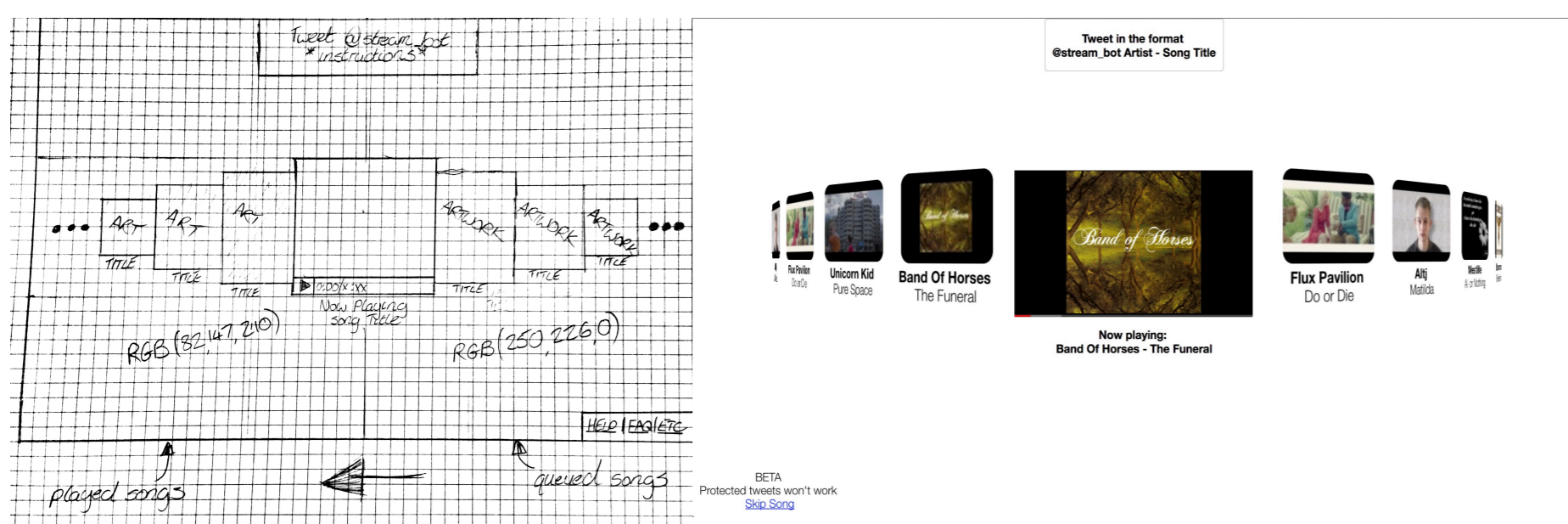


Technical Design

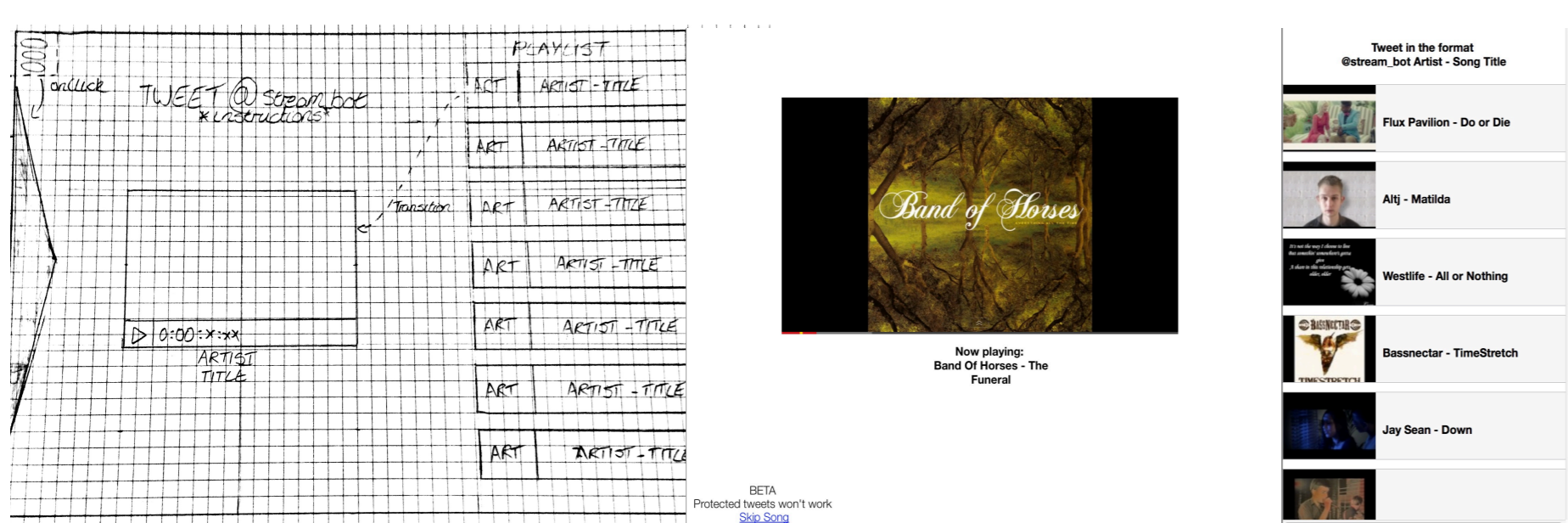
A Raspberry Pi parses song requests from Twitter and saves them to a MySQL database. A server then reads the database and displays them to the user on their device, updating the database once a song has been played.



User Interface Designs



Interface 1



Interface 2

Further Inspection of these results suggest that there is very little variance between scores from the two interfaces. A repeated measures t-test (scores from first interface and scores from second interface) was performed on the data. There was no significant effect found (*Correlation = .636, p < 0.001, r = 0.19*).

	Mean score	Mean (SD)
Interface 1	76.8	12.78
Interface 2	78.9	13.29

(Maximum score 100)

Conclusion

Quantitative and qualitative data both show that users found StreamBot usable and that such a system could be feasibly used. Also that using different design patterns and layouts for a public user interface has no discernible difference regarding system usability.