English language support for computer science

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Learning objectives

Describing quantities

Referring to information in graphs and charts

Making recommendations for future research

Review quiz

1. What is the function of an abstract?
2. Which section comes after the literature review?
3. What do you need to include in a citation in the Harvard style?
4. What is another name for the list of references?
5. In which section of the dissertation could you give recommendations for future research?
6. Why should you express caution when discussing your results?
7. What tense would you normally use to explain the limitations of your research?
8. What's the difference between coherence and cohesion?
9. How do you organise a list of references in the Harvard style?

Review quiz

1. What is the function of an abstract? To give the reader an overview of the whole paper.
2. Which section comes after the literature review? Requirement analysis
3. What do you need to include in a citation in the Harvard style? Surname, year, page number.
4. What is another name for the list of references? Bibliography.
5. In which section of the dissertation could you give recommendations for future research? Discussion or conclusion.
6. Why should you express caution when discussing your results? You cannot be certain of the factors that influence the results.
7. What tense would you normally use to explain the limitations of your research? Past tense
8. What's the difference between coherence and cohesion?
9. How do you organise a list of references in the Harvard style? Alphabetical order.

In which parts of your project dissertation do you need to write about quantities and numbers?

In which parts of your project dissertation do you need to write about quantities and numbers?

Results and discussion

You will probably show your results in tables and charts.

Too many numbers and statistics can make a text difficult to read.

The reader will be able to see the specific numbers in the charts and tables, so you often need to describe quantities only in general terms.

It is good practice to highlight what you consider the most significant aspect of a graph or chart.
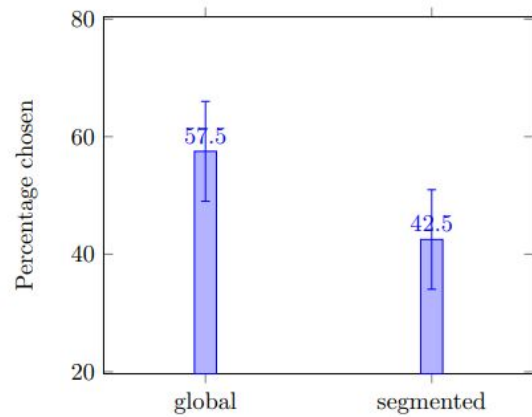
Figure 6.2: Results of the Synthesis Preference Test across all Responses
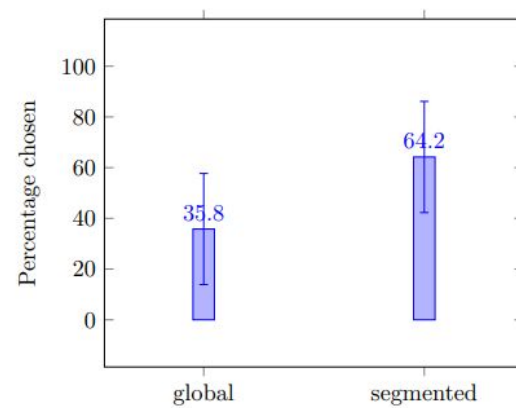

Figure 6.3: Results of the Synthesis Preference Test for High E/High S Character Types

Which sentences give general statements about the data?

A chi-squared test was performed on the the data to compare the percentages of responses preferring global versus segmented syntheses ($\chi^2(1)=21.578$, p<0.0001). The results of this test showed that there is a significant difference between the percentage of subjects who preferred global versus segmented syntheses over all samples.

The more interesting results are in the breakdown of these results into different character categories from which the criteria data was chosen. For instance, as shown in Figure 7.3, for High E/High S character types, listeners overwhelmingly preferred segmentally synthesized utterances.

Again, a chi-squared test was performed to test the significance between these two proportions in the High E/High S group ($\chi^2(1)=19.277$, p<0.0001), and it was concluded from the results of this test that a significant proportion of responses to this group preferred the segmental syntheses. The results for this character group are shown graphically in Figure 6.3.

Match the percentages with the words

5-20%   A significant majority

21-39%   A small minority

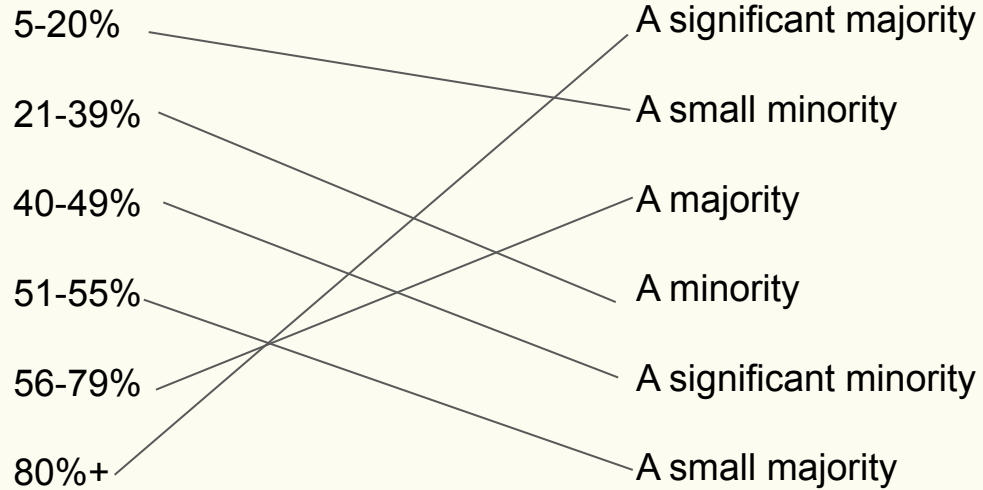40-49%   A majority

51-55%   A minority

56-79%   A significant minority

80%+   A small majority

Match the percentages with the words

5-20%   A significant majority

21-39%   A small minority

40-49%   A majority

51-55%   A minority

56-79%   A significant minority

80%+   A small majority

What are the missing words in the phrases?

1. What s_____ out in the table is …
2. Closer i_____ of the table shows …
3. It is a_____ from this table that very few …
4. The most i_____ aspect of this graph is …
5. In Fig.10 there is a clear t_____ of decreasing …
6. What is s_____ about the figures in this table is …
7. What is interesting about the data in this table is that …
8. The differences between X and Y are h_____ in Table 4.
9. From the chart, it can be seen that by _____ the greatest demand is for …
10. From this data, we can see that Study 2 resulted in the lowest value of

1. What stands out in the table is …
2. Closer inspection of the table shows …
3. It is apparent from this table that very few …
4. The most interesting aspect of this graph is …
5. In Fig.10 there is a clear trend of decreasing …
6. What is striking about the figures in this table is …
7. What is interesting about the data in this table is that …
8. The differences between X and Y are highlighted in Table 4.
9. From the chart, it can be seen that by far the greatest demand is for …
10. From this data, we can see that Study 2 resulted in the lowest value of

Write 2 sentences describing these results

Question 6: I would like to install this app instead of checking emails to find interesting events:

0%
10%
10%
60%
20%

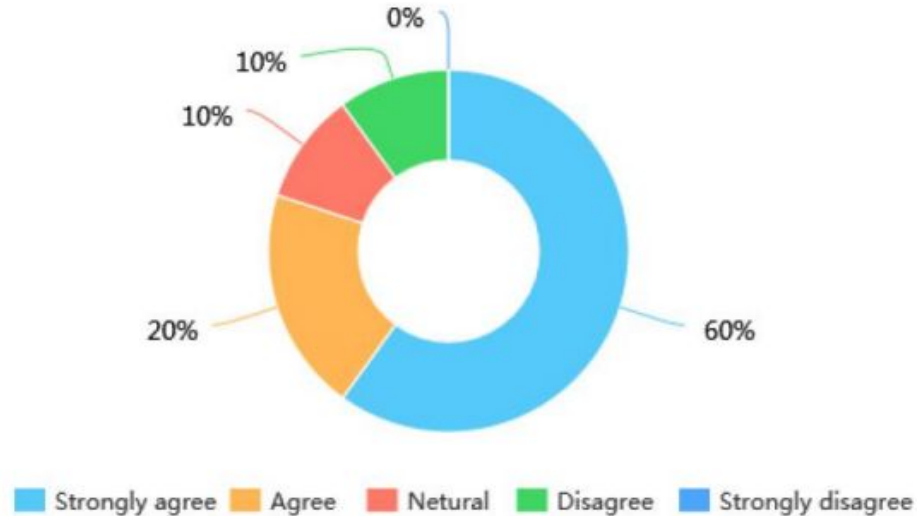Strongly agree Agree Netural Disagree Strongly disagree

Figure 6.6 Question 6 result

What stands out in the charts is that a significant majority of respondents agreed or strongly agreed that they would like to install the app.

It is apparent that only a small minority of respondents disagreed with the statement.

Is the table clearly labelled?

Is it easy to read the data in the table?

Does the writer highlight the main feature of the table?

Table 5.5: Performance comparison of the proposed teaching tool against the current teaching tool.

Difficulty	Current Tool Time (s)	Proposed Tool Time (s)	Difference (s)
5	0.14	0.97	0.83
10	0.67	2.19	1.52
15	0.52	4.60	4.08
20	1.24	11.75	10.51

As it is visible from the results in Table 5.5 the proposed teaching tool is significantly slower to return results under the same parameter configuration with the current teaching tool. After attempting to examine the reason for this difference in execution time, the two identified possible sources of delay are the population data structure selected and the output to the GUI. Currently the population is stored in an array and dictionaries would likely reduce the times taken to iterate through the population. Given more time it would
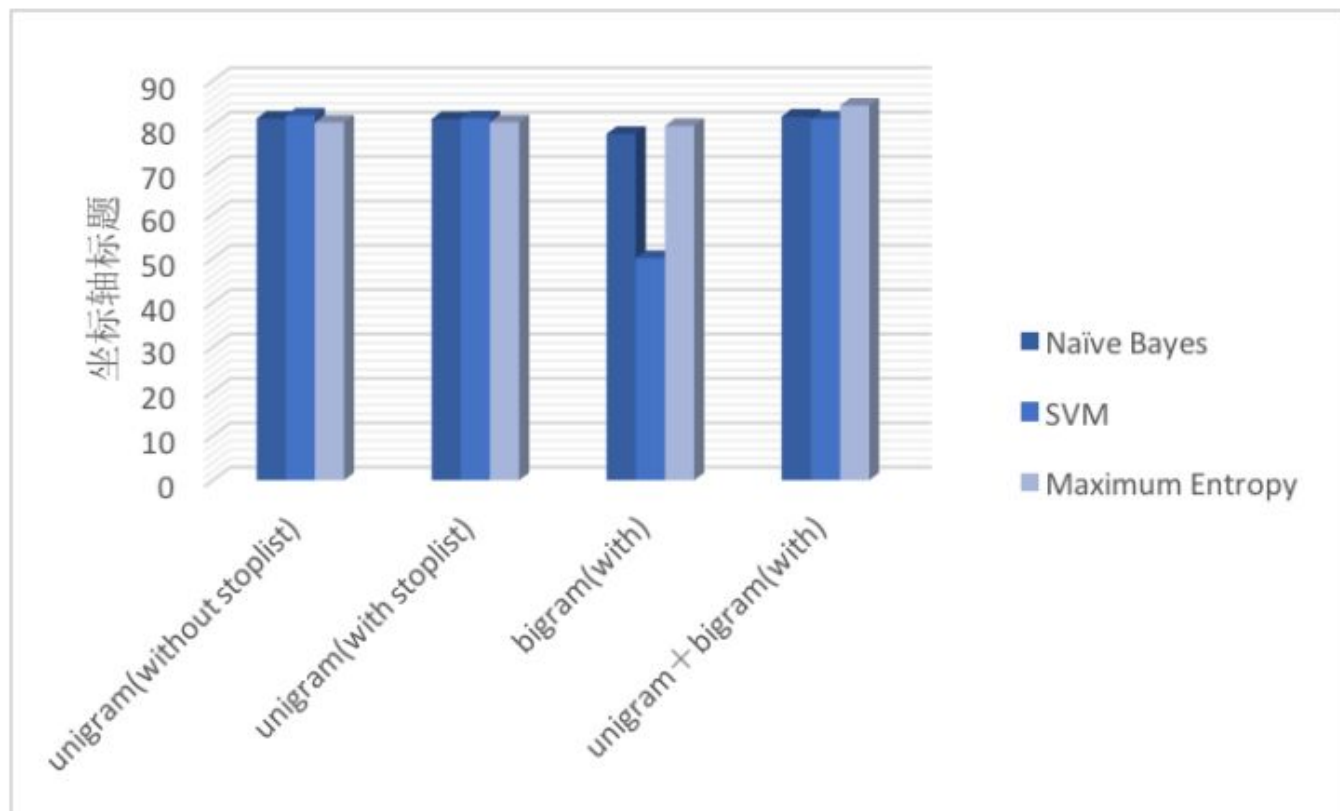
Figure 4.8: Combination of All the Results(%)

6.2.1 Reports of testing tools

Figure 6.7 Report of Arachni

Find and correct the mistakes in the descriptions of charts and graphs.

As can be seen through table 6.1, the accuracy of person detection is very low.

It may be probably because of the video definition.

The overall accuracies with different algorithms is clear shown in figure 4.7.

First of all, from the results shown above, it is clearly that the error does not change a lot.

These results express that the MATLAB code has limitations to work successfully.

And the same result can be conducted from other images.

Figure 32: Screenshot of results obtained when user's clicks on Walthamstow car park.

Find and correct the mistakes in the descriptions of charts and graphs.

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It may be because of the video definition.

The overall accuracy with different algorithms is clearly shown in figure 4.7.

First of all, from the results shown above, it is clear that the error does not change significantly.

These results show/indicate/demonstrate that the MATLAB code has limitations to work successfully.

Furthermore, the same result can be seen from other images.

Figure 32: Screenshot of results obtained when users click on Walthamstow car park.

You should provide a list of all the figures and tables in your dissertation after the contents page.

List of Figures

List of Tables

Suggestions for future work

Researchers usually make suggestions for future work at the end of a research paper. It's a good idea to propose 3-4 suggestions for future work in your dissertation.

Suggestions for future work could be based on:

Future research to address the limitations of your study

Investigations of unexpected results that you obtained

Ideas for improvements

- Your **research** is a small piece in a complicated jigsaw puzzle; it does not stand alone.

- Your reader needs to know about the whole jigsaw puzzle (the bigger picture)

Read the extract from a dissertation.

How many suggestions for future research does the writer suggest?

In conclusion, this work has proposed a novel model for synthesizing dramatic speech, and serves as a foundation for future work. Future research should explore ways to expand models like the one proposed in this dissertation. Adding an additional dimension to the existing two-dimensional space, such as 'Power,' would add nuance to voices synthesized by character traits and help better distinguish between characters that have similar Extroversion and Stability but are still very different. Since it seems that modifying pitch range and maximum pitch are not enough to define intonation, it is probably worth parameterizing intonation variations as one of the acoustic features available to be modified. In addition, the model as it is now does not account for the unique additions actors add to their performances, such as sighs and stutters, and also does not account for specialized features like jitter and creak. All these features add nuance to a performance. Incorporating complex features would improve this synthesis model, as well as any other model aspiring to recreate expressive speech.

What expressions does the writer use to make suggestions for future work?

In conclusion, this work has proposed a novel model for synthesizing dramatic speech, and serves as a foundation for future work. Future research should explore ways to expand models like the one proposed in this dissertation. Adding an additional dimension to the existing two-dimensional space, such as 'Power,' would add nuance to voices synthesized by character traits and help better distinguish between characters that have similar Extroversion and Stability but are still very different. Since it seems that modifying pitch range and maximum pitch are not enough to define intonation, it is probably worth parameterizing intonation variations as one of the acoustic features available to be modified. In addition, the model as it is now does not account for the unique additions actors add to their performances, such as sighs and stutters, and also does not account for specialized features like jitter and creak. All these features add nuance to a performance. Incorporating complex features would improve this synthesis model, as well as any other model aspiring to recreate expressive speech.

Future work should explore ways to…

It is probably worth…

This model does not account for…

…would improve this model.

Phrases for introducing suggestions for future work

Several questions still remain to be a_____.

A natural progression of this work is to a_____…

More broadly, research is also needed to d_____…

What is now needed is research involving…

This research has thrown up many questions in need of further i_____.

A study similar to this one should be carried out on…

One issue which could be usefully e_____ in future research is…

Further research is required to improve the e_____ of…

Further research should be conducted to e_____ whether…

Phrases for introducing suggestions for future work

Several questions still remain to be answered.

A natural progression of this work is to analyse…

More broadly, research is also needed to determine…

What is now needed is research involving…

This research has thrown up many questions in need of further investigation.

A study similar to this one should be carried out on…

One issue which could be usefully explored in future research is…

Further research is required to improve the efficiency of…

Further research should be conducted to establish whether…

Find and correct the errors in these suggestions for future work:

1. There are few aspects that has been built in the application that could be improved.
2. There are a lot of work that could be done in future versions of the application.
3. Suggestions for future works include…
4. The desirable functional requirements are not fully meet in this application.
5. This project only choose three data, so in future work a fourth factor could be considered.
6. The user interface could be optimize.
7. The application lacks of real device testing, so this should be done in future work.
8. There are still some parts need to be improved in the future.
9. For some optimization problems, consider setting an automatic stop update program.

Find and correct the errors in these suggestions for future work:

1. There are <u>a few (several) aspects that have been</u> built in the application that could be improved.
2. There <u>is much work </u>that could be done in future versions of the application.
3. Suggestions for future <u>work</u> include…
4. The desirable functional requirements are not fully <u>met </u>in this application.
5. This project only <u>chose</u> three <u>factors</u>, so in future work a fourth factor could be considered.
6. The user interface could be <u>optimized</u>.
7. The application lacks real device testing, so this should be done in future work.
8. There are still some parts <u>which</u> need to be improved in the future.
9. For some optimization problems, setting an automatic stop update program should be considered.

Third conditional

If I <u>had had</u> more time I <u>would have reproduced </u>the algorithms that were implemented in Python, in Java so that collection of data, implementation of algorithms and output of results could be done simultaneously in a single application.

If I had had more time = unreal past. I didn't have enough time.

- **The Third Conditional:** *hypothetical (impossible)* (if + past perfect, ... would + have + past participle)

Write a sentence using third conditional structure about this information:

The application did not include mobile payment. The users were not satisfied with it.
If the application had included mobile payment, the users would have been satisfied with it.

To
Discover
And
Understand.