

Speaker Recognition

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Abstract

In this project, we are interested in finding a set of acoustic features and algorithms that predict whether two speech segments are uttered by the same speaker or not. Example features include pitch (F_0) and formant frequencies as you learned in class. There are several features to explore, such as sub-glottal resonance frequencies and voice source features.

The maximum number of pages is 5. The 5th page may be used exclusively for references. The references should begin on an earlier page immediately after the Acknowledgements section, and continue onto the 5th page. If no space is available on an earlier page, then the references may begin on the 5th page.

Index terms should be included as shown below.

Index Terms: speech recognition, human-computer interaction, computational paralinguistics

1. Introduction

This template can be found on the conference website. Templates are provided for Microsoft Word®, and L^AT_EX. However, we highly recommend using L^AT_EX when preparing your submission. Information for full paper submission is available on the conference website.

2. Page layout and style

Authors should observe the following rules for page layout. A highly recommended way to meet these requirements is to use a given template (LibreOffice, Microsoft Word or L^AT_EX) and check details against the corresponding example PDF file. Given templates, Microsoft Word® or L^AT_EX, can be adapted/imported easily in other software such as LibreOffice, Apple Pages, LuaL^AT_EX, and XeL^AT_EX, but please be careful to match the layout of the provided PDF example.

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- Proceedings will be printed in DIN A4 format. Authors must submit their papers in DIN A4 format.
- Two columns are used except for the title section and for large figures that may need a full page width.
- Left and right margin are 20 mm each.
- Column width is 80 mm.
- Spacing between columns is 10 mm.
- Top margin is 25 mm (except for the first page which is 30 mm to the title top).
- Bottom margin is 35 mm.
- Text height (without headers and footers) is maximum 235 mm.
- Headers and footers must be left empty.
- Check indentations and spacings by comparing to this example file (in PDF).

2.1.1. Headings

Section headings are centered in boldface with the first word capitalized and the rest of the heading in lower case. Sub-headings appear like major headings, except they start at the left margin in the column. Sub-sub-headings appear like sub-headings, except they are in italics and not boldface. See the examples in this file. No more than 3 levels of headings should be used.

2.2. Text font

Times or Times Roman font is used for the main text. Font size in the main text must be 9 points, and in the References section 8 points. Other font types may be used if needed for special purposes. It is VERY IMPORTANT that while making the final PDF file, you embed all used fonts!

L^AT_EX users: users should use Adobe Type 1 fonts such as Times or Times Roman. These are used automatically by the INTERSPEECH.v2.sty style file. Authors must not use Type 3 (bitmap) fonts.

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All figures must be centered on the column (or page, if the figure spans both columns). Figure captions should follow each figure and have the format given in Figure 1.

Figures should be preferably line drawings. If they contain gray levels or colors, they should be checked to print well on a high-quality non-color laser printer.

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Figures which span 2 columns (i.e., occupy full page width) must be placed at the top or bottom of the page.

2.4. Tables

An example of a table is shown in Table 1. The caption text must be above the table.

Table 1: *This is an example of a table*

Ratio	Decibels
1/10	−20
1/1	0
2/1	≈ 6
3.16/1	10
10/1	20
100/1	40
1000/1	60

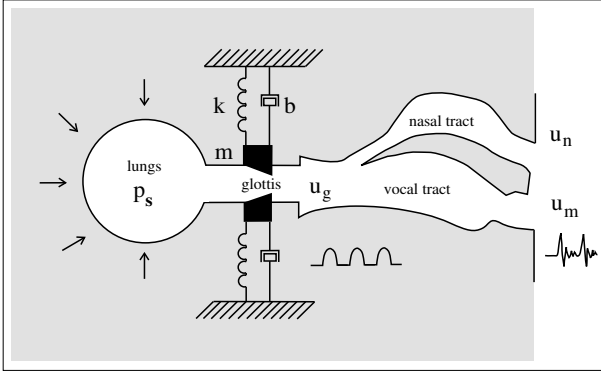


Figure 1: Schematic diagram of speech production.

2.5. Equations

Equations should be placed on separate lines and numbered. Examples of equations are given below. Particularly,

$$x(t) = s(f_\omega(t)) \quad (1)$$

where $f_\omega(t)$ is a special warping function

$$f_\omega(t) = \frac{1}{2\pi j} \oint_C \frac{\nu^{-1k} d\nu}{(1 - \beta\nu^{-1})(\nu^{-1} - \beta)} \quad (2)$$

A residue theorem states that

$$\oint_C F(z) dz = 2\pi j \sum_k \text{Res}[F(z), p_k] \quad (3)$$

Applying (3) to (1), it is straightforward to see that

$$1 + 1 = \pi \quad (4)$$

Finally we have proven the secret theorem of all speech sciences. No more math is needed to show how useful the result is!

2.6. Information for Word users only

For ease of formatting, please use the styles listed in Table 2. The styles are defined in this template file and are shown in the order in which they would be used when writing a paper. When the heading styles in Table 2 are used, section numbers are no longer required to be typed in because they will be automatically numbered by Word. Similarly, reference items will be automatically numbered by Word when the “Reference” style is used.

If your Word document contains equations, you must not save your Word document from “.docx” to “.doc” because when doing so, Word will convert all equations to images of unacceptably low resolution.

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For technical reasons, the proceedings editor will strip all active links from the papers during processing. Hyperlinks can be included in your paper, if written in full, e.g. “<http://www.foo.com/index.html>”. The link text must be all black. Please make sure that they present no problems in printing to paper.

Table 2: Main predefined styles in Word

Style Name	Entities in a Paper
Title	Title
Author	Author name
Affiliation	Author affiliation
Email	Email address
AbstractHeading	Abstract section heading
Body Text	First paragraph in abstract
Body Text Next	Following paragraphs in abstract
Index	Index terms
1. Heading 1	1 st level section heading
1.1 Heading 2	2 nd level section heading
1.1.1 Heading 3	3 rd level section heading
Body Text	First paragraph in section
Body Text Next	Following paragraphs in section
Figure Caption	Figure caption
Table Caption	Table caption
Equation	Equations
• List Bullet	Bulleted lists
[1] Reference	References

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The reference format is the standard IEEE one. References should be numbered in order of appearance, for example [1], [2], [3, pp. 417–422], and [4].

2.11. Abstract

The total length of the abstract is limited to 200 words. The abstract included in your paper and the one you enter during web-based submission must be identical. Avoid non-ASCII characters or symbols as they may not display correctly in the abstract book.

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3. Discussion

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4. Conclusions

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5. Acknowledgements

The ISCA Board would like to thank the organizing committees of the past INTERSPEECH conferences for their help and for kindly providing the template files.

6. References

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