Analysing Image Sequences and Other Articulatory Data Using Vector Norms and Related Methods

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Outline

- This talk starts with a short intro on how I got started with Pixel Difference or using vector norms to analyse overall change in ultrasound (and other) video sequences. It all began with needing to find a quick way of identifying articulatory onsets in ultrasound recordings of a delayed naming experiment (specifically one using the Rastle instructions – see Rastle et al. 2005). The first version of Pixel Difference was simply Euclidean distance.
- I will then talk about what we can and cannot do with these methods in time domain analysis of articulatory data these days. I will take short side trips to look at similar methods applied to other articulatory data. We have looked at tongue splines and lip videos and I will discuss what kind of challenges and understanding has resulted from those attempts. Finally, analysing 3D/4D ultrasound has been a recent major focus, but unfortunately frame rate issues are not so easy to solve.
- I will finish the talk by discussing why MRI would be very

Introduction: The why

- Pre-speech articulation is interesting from several points of view, but analysing ultrasound videos manually is not great (Palo 2019).
- stuff

References

Palo, P. (2019). *Measuring Pre-Speech Articulation*. PhD thesis, Queen Margaret University, Edinburgh.

Something else i.e. section title