Automated Segmentation Exercises with PATKIT

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Land acknowledgement

The University of Alberta, its buildings, labs and research stations are primarily located on the territory of the Néhiyaw (Cree), Niitsitapi (Blackfoot), Métis, Nakoda (Stoney), Dene, Haudenosaunee (Iroquois) and Anishinaabe (Ojibway/Saulteaux), lands that are now known as part of Treaties 6, 7 and 8 and homeland of the Métis. The University of Alberta respects the sovereignty, lands, histories, languages, knowledge systems and cultures of all First Nations, Métis and Inuit nations.

In addition to our university's written land acknowledgement I'd like to speak of my own relation to the lands where I have been working for almost a year now.

Outline

- Land acknowledgement
- This slide
- Introduction: The what and the why
- Method: The how
- Demo
- Want to have a go yourself?
- MaTiPSS ad
- Thanks and references

Introduction: The what and the why

- Segmentation can be explained, but actually getting good at it requires hands-on practice.
- While Praat (Boersma and Weenink 2010) has an excellent segmentation interface, it does not provide a segmentation exercise interface.
- PATKIT (Palo et al. 2025) copies Praat's segmentation interface and adds a resettable exercise feature.

Method: The how – Setting up

- Open a directory with matching TextGrids and audio files in PATKIT as an exercise:
  Exercises → Import directory...
- If setting up for others, go to:
  Exercises → Save as exercise ...
  to save the audio files and the scrambled TextGrids in a new location.

Method: The how – Running an exercise

- Either do the setup steps or get an exercise dataset from someone.
- If you want to compare your segmentation with the model, you'll need to get the model files too.
- Do the segmentation.
- Check how you are doing by going to:
  Exercises → Compare to model
- When wishing to re-run an exercise go to:
  Exercises → Scramble TextGrids
- Rinse and repeat.

Demo - seeing is believing

Discussion

- So, do you have thoughts?
- What would make this more useful to you?
- What other features would be good to have?

Want to have a go yourself?

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Keep an eye out for version 0.18 and updates (0.18.x) later this week.

Installation instructions

- Install uv `https://docs.astral.sh/uv/`
- On the commandline run:
  uv tool install patkit
  patkit
- This should print the commandline help.

Running the example assignment/exercise

- Get the example data from recorded_data/assignment_example and exercises/minimal and put it in a folder of your own choosing.
- Run:
  patkit exercise [folder_name]
- This should open the annotator GUI.

MaTiPSS ad

Methods and Techniques in Phonetics of Signing and Speech

- `https://matips.org/`
- Title and authors 19 July, anywhere on Earth
- Full one-page abstract 26 July, anywhere on Earth
- Results by beginning of August.
- Conference 17-19 October, University of Alberta, Edmonton, Alberta, Canada.

- Canadian Acoustics Week happens to be in neighbouring Calgary 15-17 October.
  - `https://jcaa.caa-aca.ca/index.php/jcaa/announcement/view/91`
  - There will probably be a bus between the conferences.

Thank you!

References

Boersma, P. and Weenink, D. (2010). Praat: Doing phonetics by computer [Computer program]. Version 5.1.44, retrieved 4 October 2010 from http://www.praat.org/.

Palo, P., Moisik, S. R., and Faytak, M. (2025). PATKIT: Phonetic Analysis ToolKIT [Python software package]. Available in a public software repository, accessed 8 February 2025. https://github.com/giuthas/patkit.