



New emotional speech database in Slovak

Róbert Sabo, Marian Trnka

robert.sabo@savba.sk, trnka@savba.sk



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement number 832969.



Motivation

- To saturate the lack of accessible speech recordings usable for training tools for detecting speech under **stress**.
- *Stress is a feeling of emotional or physical tension.*

Goals





To record

- as many speakers as possible
- speech recordings with high sound quality
- neutral speech and speech under stress from each speaker
- different degrees of stress
- as much speech as possible
 - Comparable amount of neutral speech and speech under stress
- speech samples as similar as possible to real-life situations under stress

Methodology

- Recordings of professional actors
- Recordings on smartphones and in the actors' home environment (precise instructions for the recording process).
- Each actor records 19 real-life situations (including the description of the character, situation, and the stressors)
 - 10-15 sentences in each situation,
 - each situation could be played at different level of stress (neutral, increased, extremely increased, calming)
 - 12 stress-inducing scenarios - played in neutral, increased, extremely increased level of stress
 - 3 scenarios - played in neutral and soothing way (as opposition to stress)
 - 4 scenarios played only in neutral way (in order to exclude the influence of the semantics of texts intended to induce stress)
- At first, the actor records only two situations . Recordings are checked for acoustic quality and quality of acting (significant difference between levels).

Current state of database

- 16 speakers recorded
- 9 males, 8 females
- Recorded
 - 2724 neutral utterances, 
 - 2208 utterances for increased stress, 
 - 2208 utterances for extremely increased stress, 
 - 246 soothing utterances. 

Subjective evaluation

- Annotation by multiple annotators, which will give information about the perceived level of stress acuteness.
- Task:
 - Try to assess distress, fear, anxiety or discomfort on a scale of 0 to 100
 - Rate how you think the person saying the following utterances felt on that scale.

A speech stress assessment tool

Zadajte prosím identifikačné údaje.

Please fill information about you and select List.

Zadajte identifikačné číslo/Your ID:

Krstné meno/First name:

Rok narodenia/Year of birth:

Pohlavie/Sex: -- ▾

Jazyk/Your language: -- ▾

Zoznam na anotovanie/List of sounds to anotate: -- ▾

Po vyplnení kliknite, prosím, na tlačidlo

Fill and press "Ďalej/Next" to continue. [Ďalej/Next](#)

Identifikačné číslo môže obsahovať iba číslice!

ID must contain only numbers

A speech stress assessment tool

Try to assess distress, fear, anxiety or discomfort on a scale of 0 to 100. Imagine you have a thermometer that measures these feelings according to the following scale. Rate how you think the person saying the following utterances felt on that scale.

File 1 from 102

0:00 / 0:06

☐ 0 ☒ 10 ☐ 20 ☐ 30 ☐ 40 ☐ 50 ☐ 60 ☐ 70 ☐ 80 ☐ 90 ☐ 100

File 2 from 102

0:00 / 0:05

☐ 0 ☐ 10 ☐ 20 ☐ 30 ☒ 40 ☐ 50 ☐ 60 ☐ 70 ☐ 80 ☐ 90 ☐ 100

File 3 from 102

0:00 / 0:06

☐ 0 ☐ 10 ☒ 20 ☐ 30 ☐ 40 ☐ 50 ☐ 60 ☐ 70 ☐ 80 ☐ 90 ☐ 100

Thermometer Scale:

- 100 Highest anxiety/distress that you have ever felt.
- 90 Extremely anxious/distressed.
- 80 Very anxious/distressed; can't concentrate. Physiological signs present.
- 70 Quite anxious/distressed; interfering with functioning. Physiological signs may be present.
- 60 Moderate-to-strong anxiety or distress.
- 50 Moderate anxiety/distress; uncomfortable, but can continue to function.
- 40 Mild-to-moderate anxiety or distress.
- 30 Mild anxiety/distress; no interference with functioning.
- 20 Minimal anxiety/distress.
- 10 Alert and awake; concentrating well.
- 0 No distress; totally relaxed.

Conclusions

- We have developed
 - methodology for collecting speech recordings under stress
 - Simple stress assesmet tool for subjective evaluation of perceived stress in speech
- Currently we recorded 16 speakers, but we are still in process of building speech database, that will be used for training automatic recognition of speech under acute stress in order to identify crisis situations from speech.

Thank you for your attention!

Announcement:



The work presented at this work is funded from the project that has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 832969.

The outputs of the presented papers reflect the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

SATIE public website: <http://satie-h2020.eu/>

The presented work is also co-funded by European Regional Development Fund, Ministry of Transport and Construction of the Slovak Republic and Ministry of Economy of the Slovak Republic, in the frame of the project Early Warning of Alzheimer (reg. No. 67/2020-2060-2230-V631) and from the VEGA agency project No. 1/0667/18, Automatic assessment of acute stress from speech.