Team Dialogue

Smart Teddy Bear

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Smart Teddy Bear

- Increasing quality of life for patients developing dementia
- Using machine learning to detect events (such as dialogue) in a household setting
- Helps seniors live at home for longer in a safer environment

https://www.thehagueuniversity.com/research/centre-of-expertise/projectdetails/smart-teddy-project

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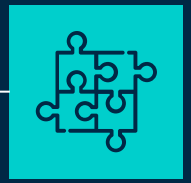


01

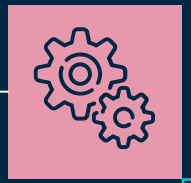
Our accomplishments

- Sprint overview
- News since last time
- General progress update

02

Current activities

- New approach to data processing
- Tuning our second model

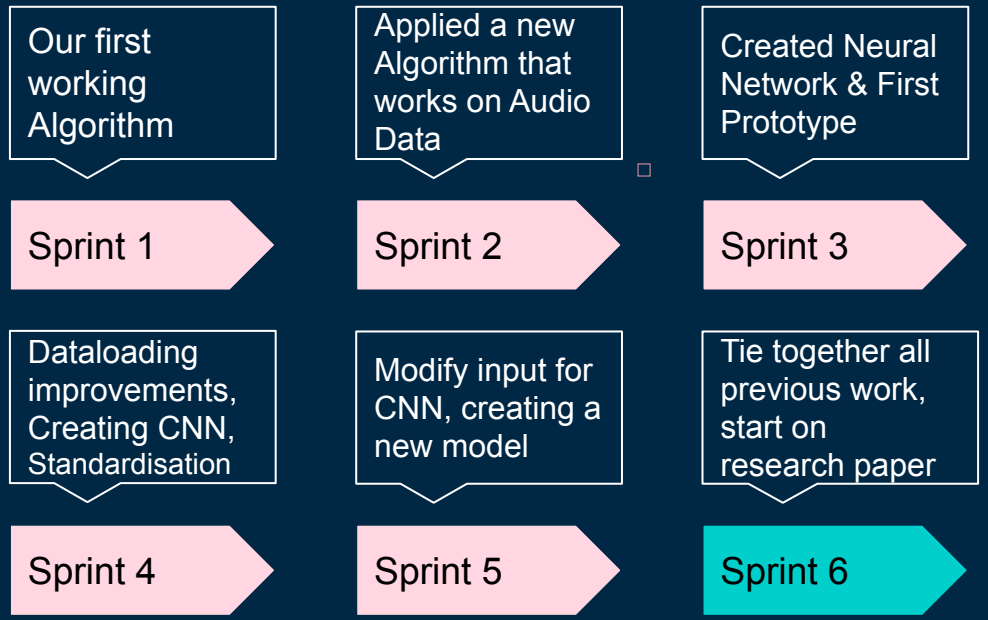


03

Next steps

- Combining all our work
- Research paper
- Finishing the project

Sprint Overview



Last time

Here is what we said we would do:

- Creating a second model with functionality to identify speakers in a conversation ✓
- Optimizing & testing hyperparameters ✓
- Making the dataset more difficult ✓

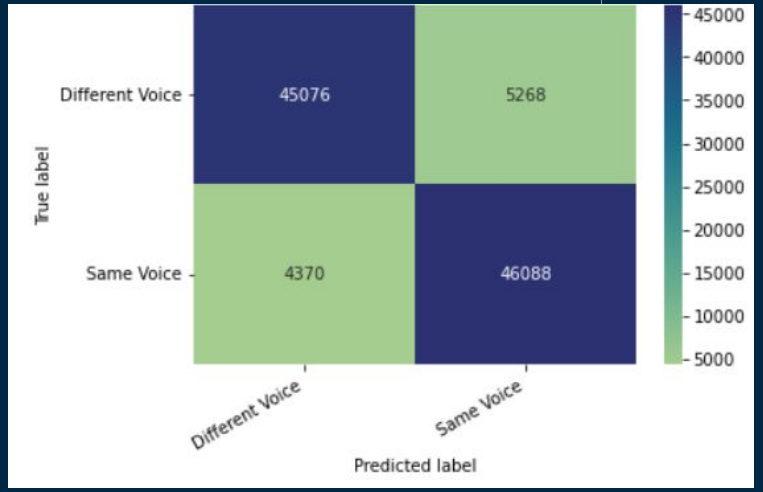
Second External presentation (19/11/2021)

Accomplishments

- First model looks for speech in audio files
  98% accuracy on slightly noisy data, 90% accuracy on very noisy data (amplified by 20dB)
- Second model compares all found segments containing speech to determine amount of speakers
- New approach to data processing, using raw MFCC data instead of creating visual representations
- Finished the Learning Lab about data preparation

The second model

- Accuracy of 90%
- Compares two samples with each other
- Same voice → gets same ID
- Not the same voice → gets max ID + 1



Current activities

- Start writing the last code
- Started with personal portfolios
- Structured the research paper, now starting to fill it with text

Challenges

- Making our models work together
- Writing a short and concise paper
- Deliver a end product we are satisfied with, in the time we have left

Next steps

- Bringing it all together - write code to combine our models & use them together on any data
- Finishing the paper - possibly for submission to a conference
- Demonstrate our final product for our problem owner

Thank you for listening!

Questions / Feedback?