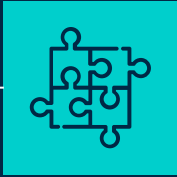


# Team Dialogue

## Smart Teddy Bear

Amber van Bezouwen  
Björn Appehl  
David Hollander  
Leander Loomans  
Maria Hoendermis  
Olaf Bolleurs

# Table of Contents



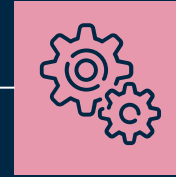
01

Our accomplishments



02

Current activities



03

Next steps

# Sprint Overview

Our first  
working  
Algorithm

Sprint 1

Applied a new  
Algorithm to  
Audio Data

Sprint 2

Created NN &  
First Prototype

Sprint 3

Dataloading,  
Creating CNN,  
Standardisation

Sprint 4

# Summary

During the last external presentation,  
here is what we said we would do:

## In the coming weeks

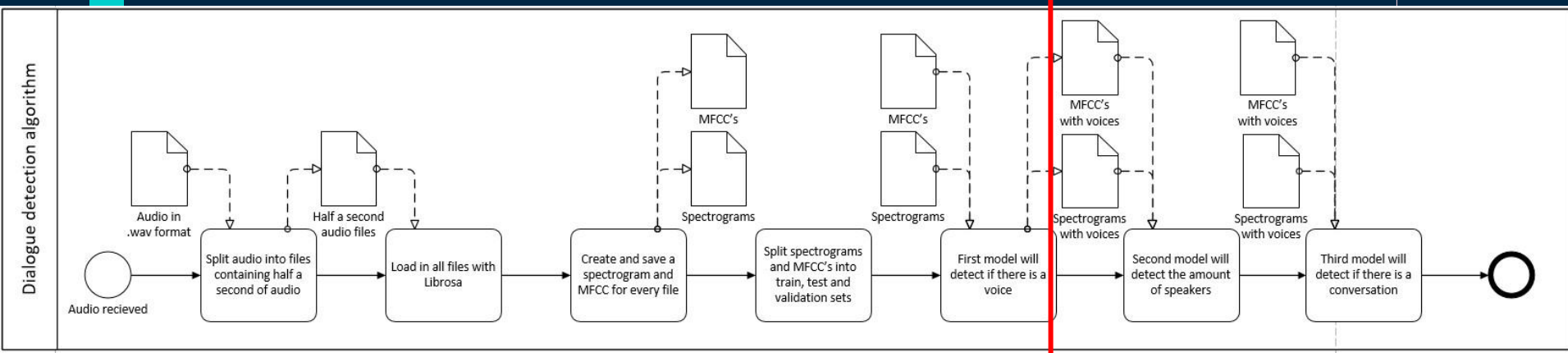
- Look into neural networks
- Develop a functional prototype
- Continue improving the datasets



*First External presentation (08/10/2021)*

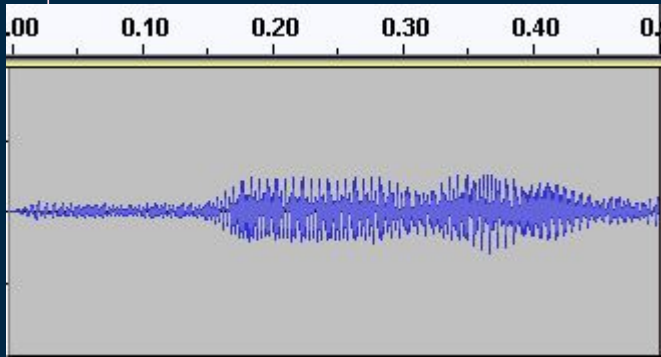
# Accomplishments

- First Prototype Using RFC to get a boolean output  
Accuracy ~80% on test set
- Standardized code for data preparation & data loading  
(audio to images, images into dataloader)



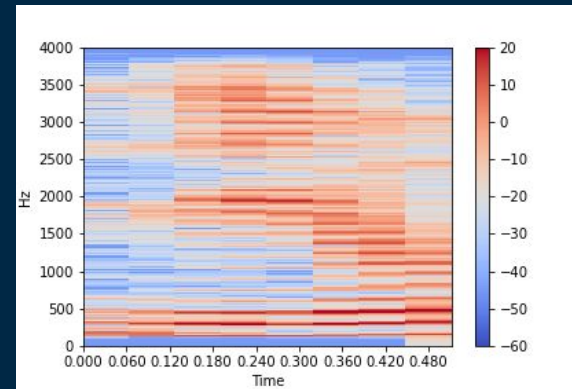
# Data loading & preparation

.wav file



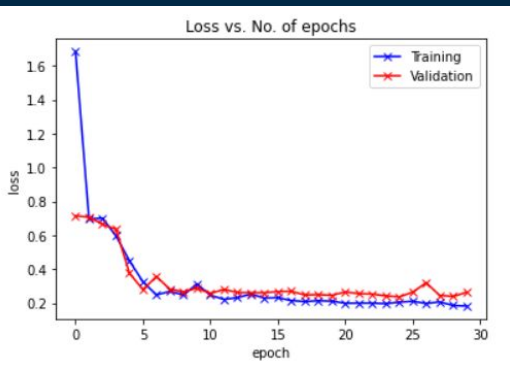
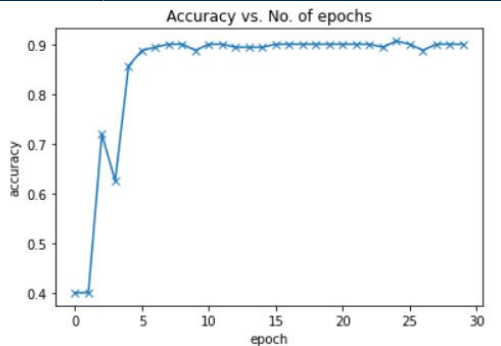
→  
Convert to  
image

Spectrogram



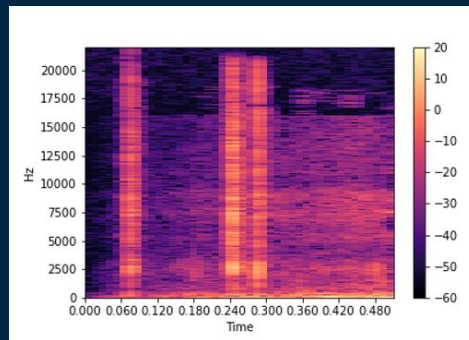
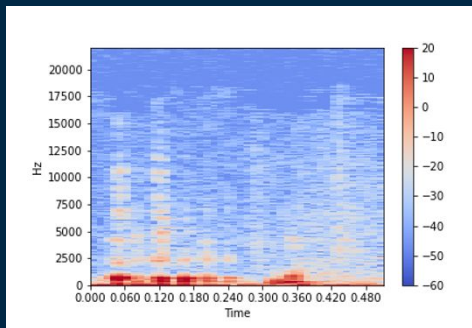
# Current activities

- Working on a CNN with 6 layers, accuracy 94%
- Tuning CNN parameters (Epochs, learning rate, etc)
- Expanding & structuring our evaluation methods
- Determine the amount of speakers in an audio file containing speech



# Challenges

- Some spectrograms are miscolored - the color scale occasionally swaps
- Combining spectrograms to compare voices





# Next steps

- Making a second prototype with functionality to detect speakers in a conversation
- Optimizing & testing hyperparameters
- Making the dataset more difficult



Thank you  
for listening!