Off-the-shelf HuggingFace models for audio deepfake detection

Adriana STAN

www.adrianastan.com

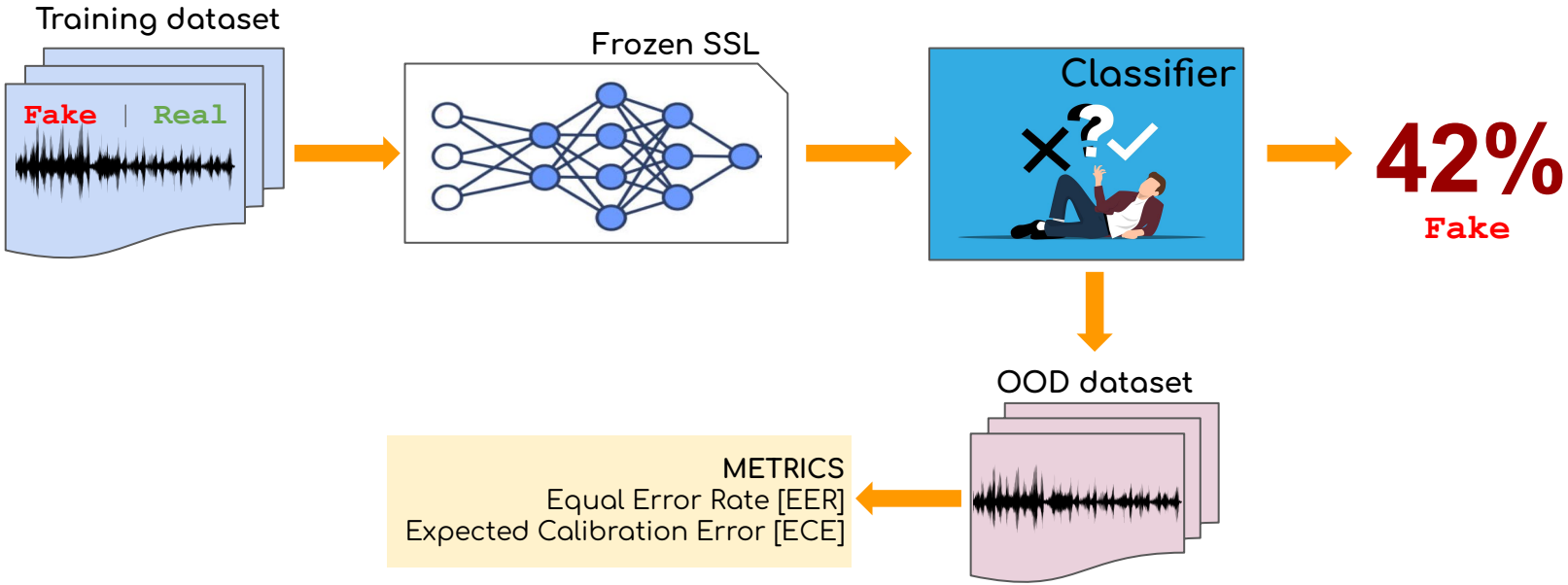
Cluj-Napoca, 29.10.2024

Audio deepfakes

Generating audio deepfakes

- Text-to-speech
- Voice cloning

Deepfake detection

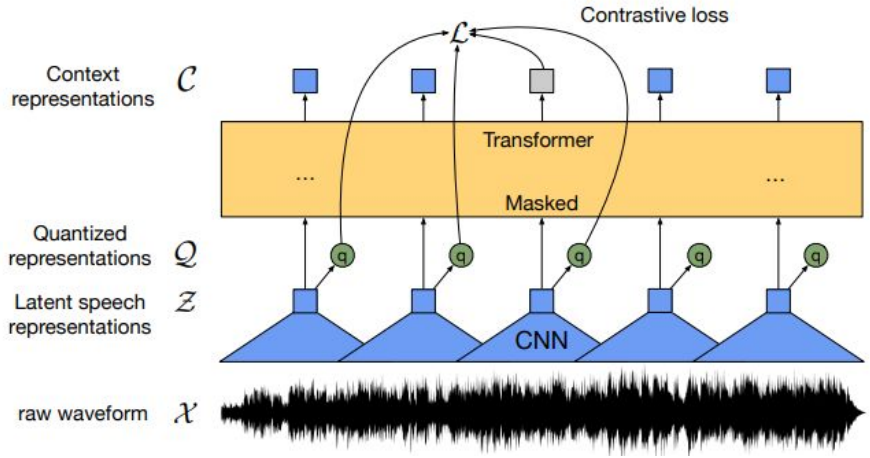


Q: SSL models?

Audio SSL:
wav2vec2 and wavLM

wav2vec2

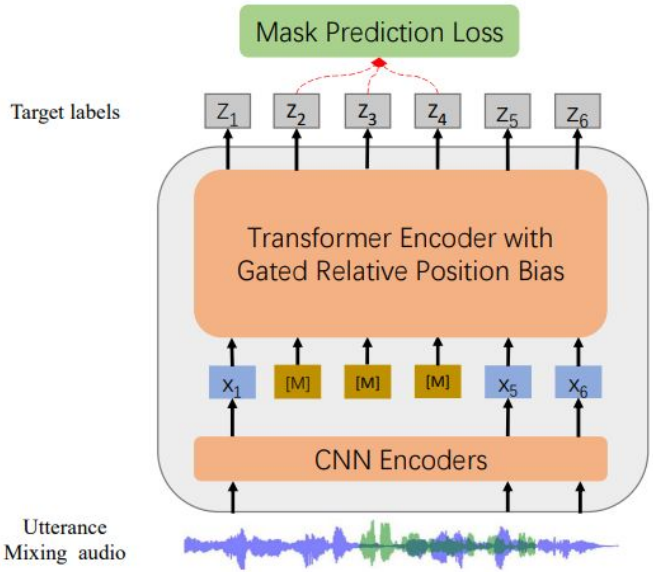
https://huggingface.co/collections/facebook/wav2vec-20-651e865258e3dee2586c89f5



https://arxiv.org/abs/2006.11477

wavLM

https://huggingface.co/microsoft/wavlm-large



https://arxiv.org/abs/2110.13900

Hugging Face

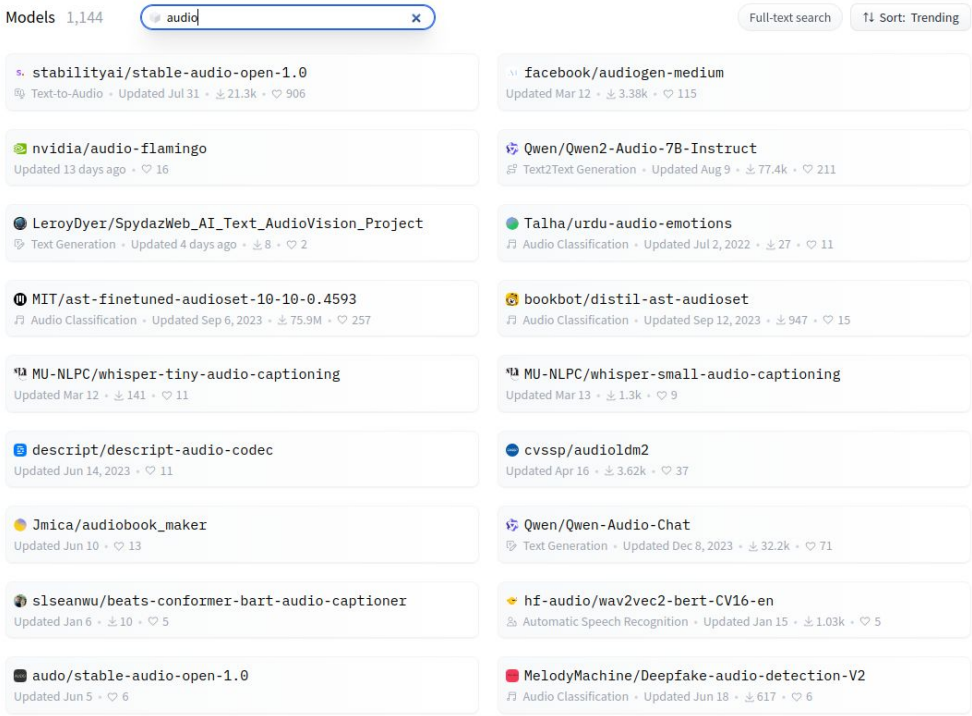
Hugging Face

- **Open-Source ML Hub**: Hugging Face is a popular platform providing an extensive repository of pre-trained machine learning models, particularly for Natural Language Processing (NLP), such as transformers for tasks like text generation, translation, and question-answering.

- **Transformers Library**: It offers the widely-used Transformers library, which makes it easy to integrate and fine-tune state-of-the-art transformer models from BERT, GPT, T5, and many others in a few lines of code.

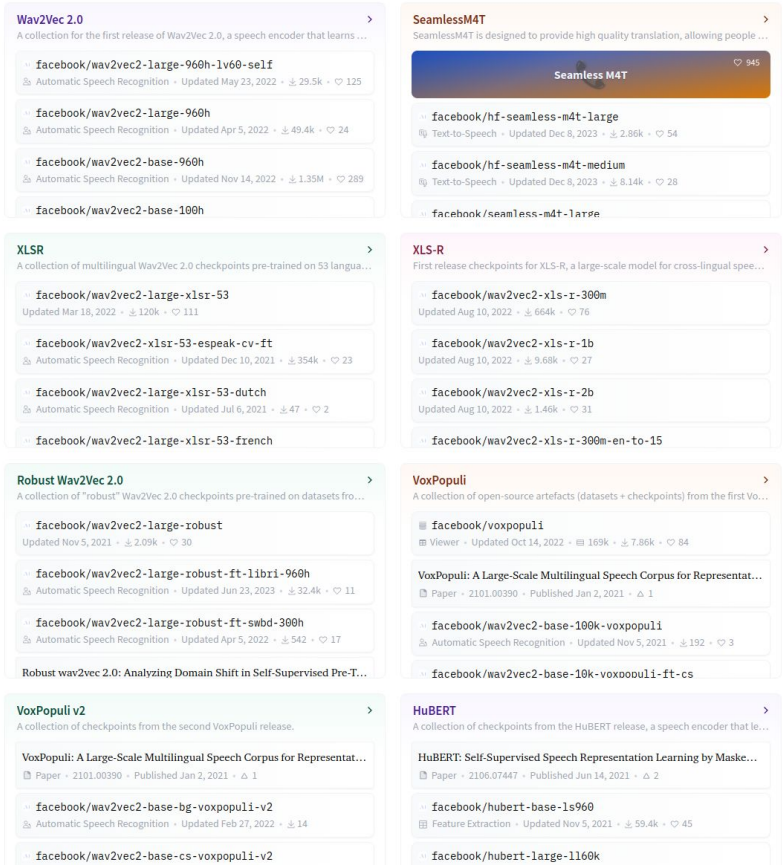
- **Community and Collaboration**: Hugging Face fosters a collaborative environment where researchers and developers can share models and datasets, and it also provides tools for deploying, managing, and scaling ML models through their Inference API and Spaces platform.

Hugging Face



Hugging Face

https://huggingface.co/facebook

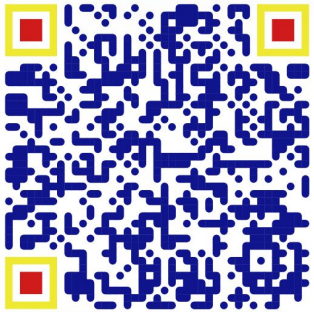


Running the experiment...

Colab notebook

Thank you for your attention!

Questions?



Code: `github.com/adrianastan/deepfake_pydata`

adriana.stan@gmail.com
www.adrianastan.com