



Approfondimento: ffmpeg, Teachable Machine e Databricks

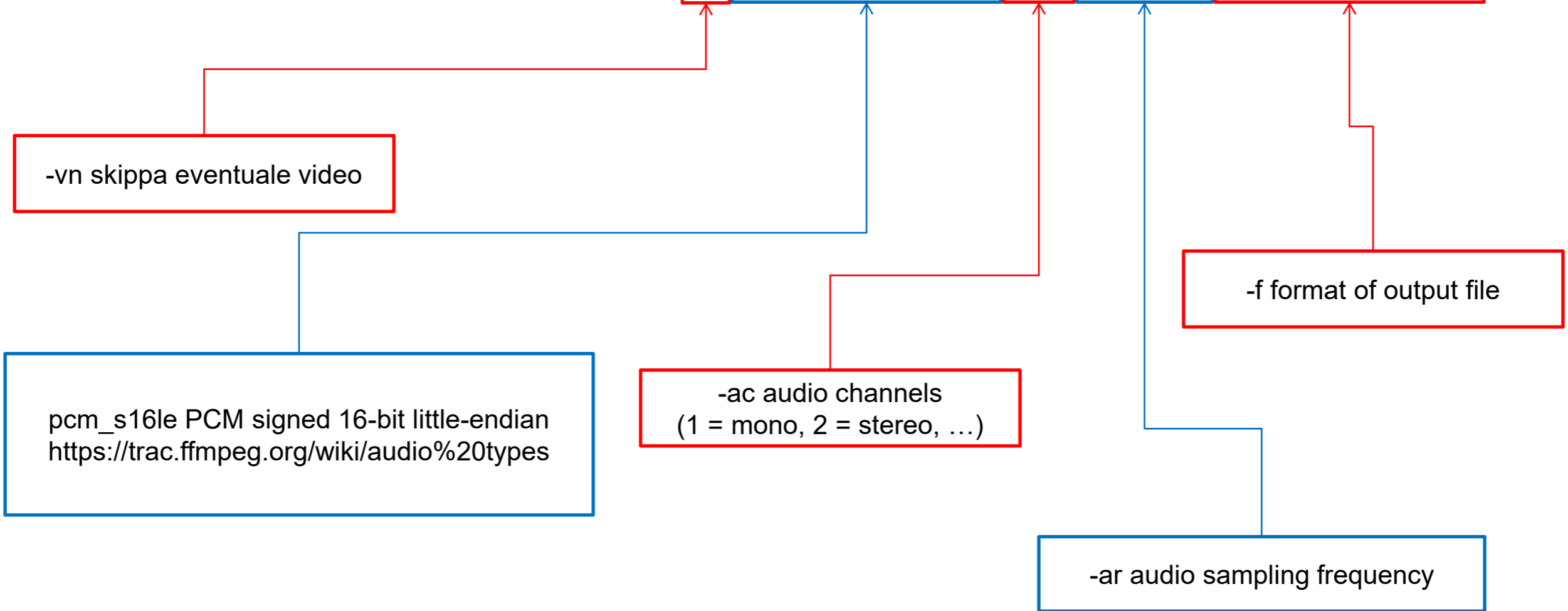
Prof. Filippo Milotta
milotta@dmi.unict.it



ffmpeg

Conversione MP3 → WAV

```
cmdffmpeg = "./ffmpeg/bin/ffmpeg -i Piano2.mp3 -vn -acodec pcm_s16le -ac 1 -ar 44100 -f wav PianoC.wav"
```





Google Teachable Machine

<https://teachablemachine.withgoogle.com/train/audio>

The screenshot displays the Google Teachable Machine interface for audio training. On the left, a man with a beard and glasses is gesturing towards the interface. The interface features a sidebar with a 'Processing' indicator and a 'crepe' logo. The main area is titled 'Teachable Machine' and contains three audio input sections for 'up', 'down', and 'meow'. Each section includes a 'Use Mic' button, an 'Upload File' button, and a spectrogram visualization. A 'Training' panel on the right contains a 'Train Model' button and an 'Advanced' dropdown menu. A 'SUBSCRIBE' button is visible in the bottom right corner.



Databricks

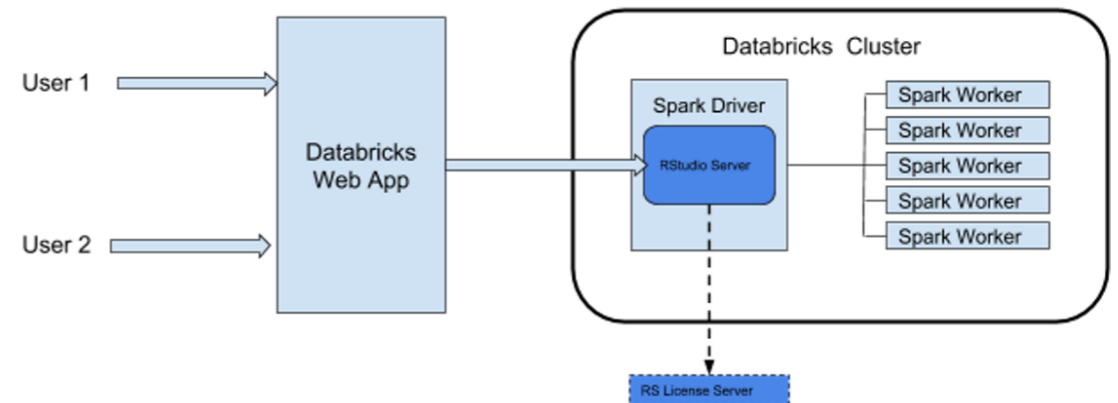


What is it?

- DataBricks provides a **Unified Data Analytics and Analysis Platform** powered by Apache Spark for data scientist teams to collaborate with data engineers and lines of business to build data products
- Ref:** <https://databricks.com/company/about>

How does it work?

- Coding into notebooks, like **Jupyter Notebook** (Python)
- A Jupyter Notebook document is a JSON document, following a versioned schema, and containing an ordered list of input/output cells which can contain code, text (using Markdown), mathematics, plots, ...
- Several languages available **Python, R, Scala, SQL, bash, html**



Features

- Notebooks, MLFlow for tracking ML experiments, RStudio on DataBricks, **Scalable configuration** of Driver Nodes (like a tunable VM), Data ingestion from ADLS
- Apache Spark environment (parallel computation, redundant ML, Lib to optimize ML code)