

Lab7: ASR, Facial keypoints, Face emotion recognition

3099704 AI for Digital Health (2025/2)

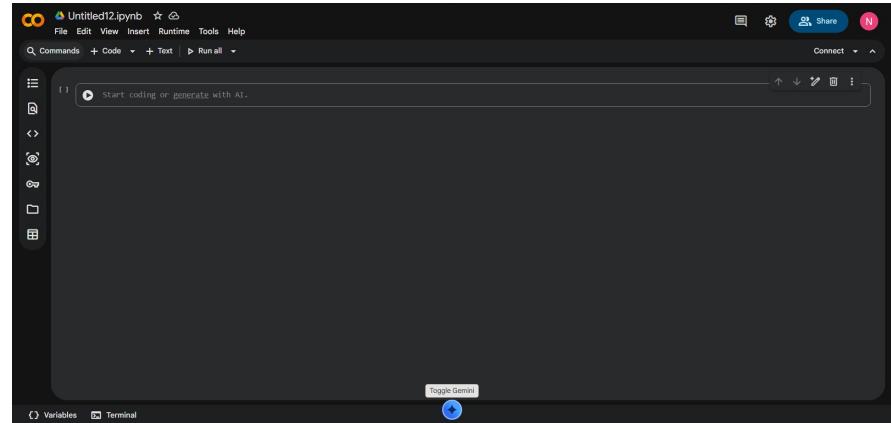
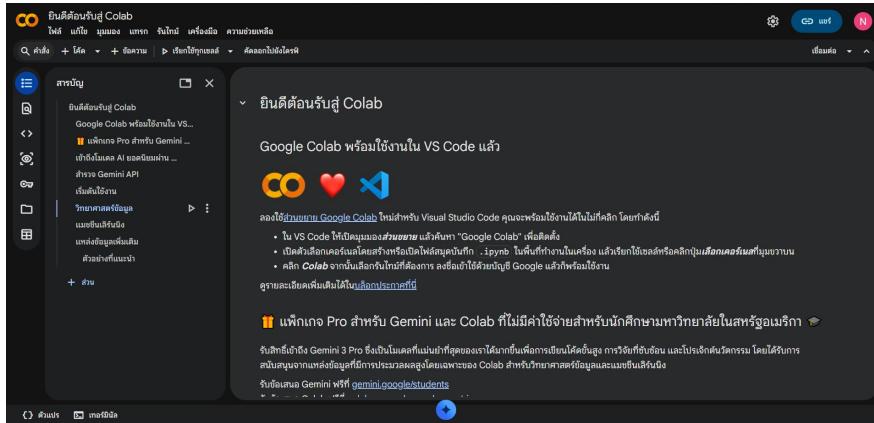
Objective

- Use pre-trained models to perform Thai Automatic Speech Recognition (ASR) and Face Recognition.



Material

- With **Google Colab**, you don't need to install any software. All you need is a Google account, and you can start using it right away. Simply visit: <https://colab.research.google.com/> or select NEW NOTEBOOK to start a new file.



Lab7.1: Automatic Speech Recognition (ASR)

In this lab ([Lab 7 1 ASR.ipynb](#)), we demonstrate how to use pre-trained models for Thai Automatic Speech Recognition (ASR). Two models are introduced: Thonburian Whisper and the Typhoon ASR model.

The screenshot shows a Jupyter Notebook interface with the following details:

- Title Bar:** ASR_thonburian_whisper.ipynb
- File Menu:** File, Edit, View, Insert, Runtime, Tools, Help
- Toolbar:** Commands, Code, Text, Run all, Connect 14, Share, Help
- Section Header:** Lab 7.1 – Automatic Speech Recognition (ASR): Thonburian Whisper, Typhoon ASR model
- Description:** In this lab, we demonstrate how to use pre-trained models for Thai Automatic Speech Recognition (ASR). Two models are introduced: Thonburian Whisper and the Typhoon ASR model.
- Section 1: Setup**
 - Code cell:

```
# Download library
!pip install git+https://github.com/huggingface/transformers
!pip install librosa soundfile
!sudo apt install ffmpeg
!pip install torchaudio ipywebrtc notebook
!pip install -q gradio
!pip install pytube
!jupyter nbextension enable --py widgetsnbextension
!pip install -U nemo_toolkit["asr"]
!pip install yt_dlp
```
 - Output cell: "Show hidden output"
 - Code cell:

```
# Import library
import os
```



Lab7.2: Face Recognition

In this lab ([Lab 7 2 FaceRecognition.ipynb](#)), we demonstrate examples of using the DeepFace and MediaPipe frameworks, which are used for face recognition and facial attribute analysis.

The code below download dataset, imports all required libraries and defines utility functions that will be used in the rest of this notebook.

```
# download library
!pip install deepface
!pip install mediapipe==0.10.13

!wget -O Face_landmarker_v2_with_blendshapes.task -q https://storage.googleapis.com/mediapipe-models/Face_Landmarker/Face_Landmarker/float16/1/face_landmarker.task
```

Requirement already satisfied: deepface in /usr/local/lib/python3.12/dist-packages (0.0.96)
Requirement already satisfied: requests>=2.27.1 in /usr/local/lib/python3.12/dist-packages (from deepface) (2.32.4)
Requirement already satisfied: numpy>=1.14.0 in /usr/local/lib/python3.12/dist-packages (from deepface) (2.0.2)
Requirement already satisfied: pandas>=1.23.0 in /usr/local/lib/python3.12/dist-packages (from deepface) (2.2.2)
Requirement already satisfied: gdowm>=3.10.1 in /usr/local/lib/python3.12/dist-packages (from deepface) (5.2.0)
Requirement already satisfied: tqlm>=4.30.0 in /usr/local/lib/python3.12/dist-packages (from deepface) (4.67.1)
Requirement already satisfied: pillow>=9.0.0 in /usr/local/lib/python3.12/dist-packages (from deepface) (9.3.0)
Requirement already satisfied: tensorflow>=2.6.0 in /usr/local/lib/python3.12/dist-packages (from deepface) (4.12.0.88)
Requirement already satisfied: tensorflow<3.0.0 in /usr/local/lib/python3.12/dist-packages (from deepface) (2.19.0)
Requirement already satisfied: keras>=2.2.0 in /usr/local/lib/python3.12/dist-packages (from deepface) (3.10.0)

Automatic saving failed. This file was updated remotely or in another tab. Show diff



MediaPipe