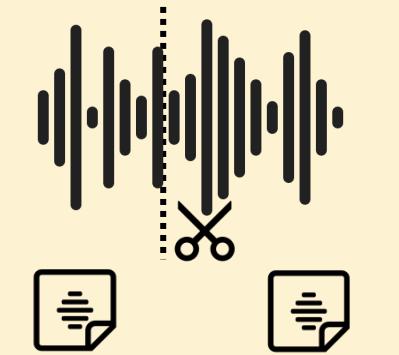


(A) Data Collection and Filtering

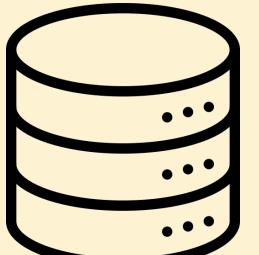


In-the-wild Data



VAD

(B) Annotation Tool Construction



Tele-CTC-FT

Step-Audio2-FT

Fine-Tune

(C) Automatic Transcription and Fusion



Tele-CTC-FT

ASR-Text

W_1



W_2

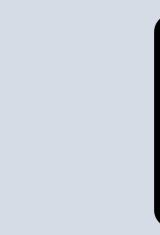
StepAudio2-FT



Dolphin



Tele-ASR



Final-Text

W_3

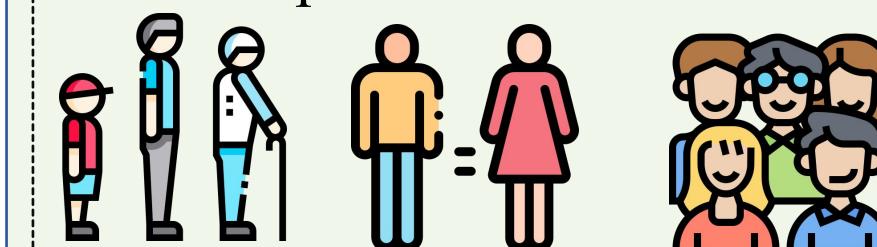
W_4



$ROVER(W_1, W_2, W_3, W_4)$

(D) Multi-Dimensional Annotations

Speaker Attributes



Age

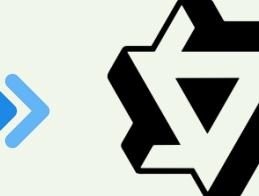
Gender

Multispeaker
Detection

Translation



Lexicon-based
Translation

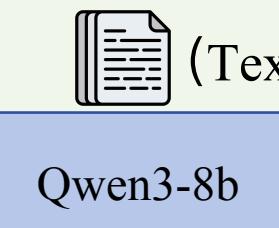


Qwen3-8b
Refinement

Emotion



SenseVoice
Emo2vec



Qwen3-8b

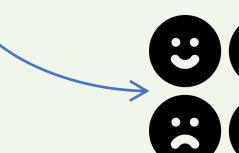
Cross
Validation
Non-
neutral



Gemini

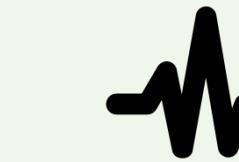


Deepseek



Deepseek

Acoustic Features



Energy



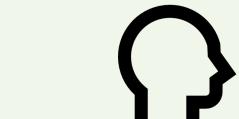
Volume



Pitch



Speech Rate



DNSMOS



SNR