Dynamic-SUPERB Call for Tasks

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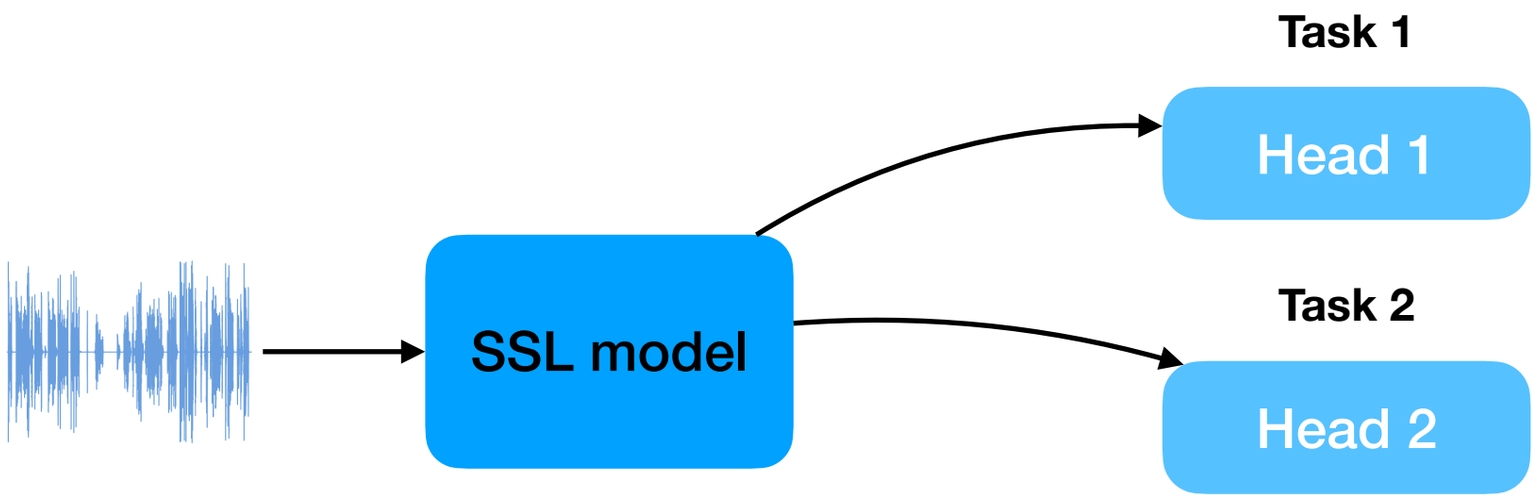
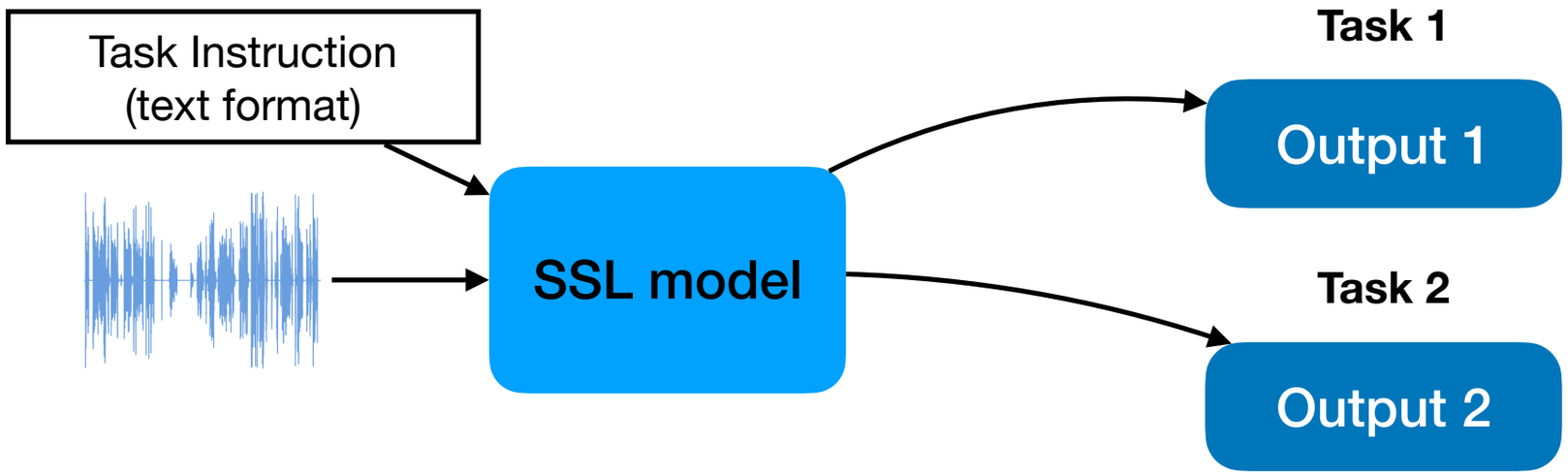
Universal Model?

From Fine-Tuning to Instruction Tuning





- Typical fine-tuning is time-wasting and storage-inefficient.
- How do we evaluate instruction-based models?

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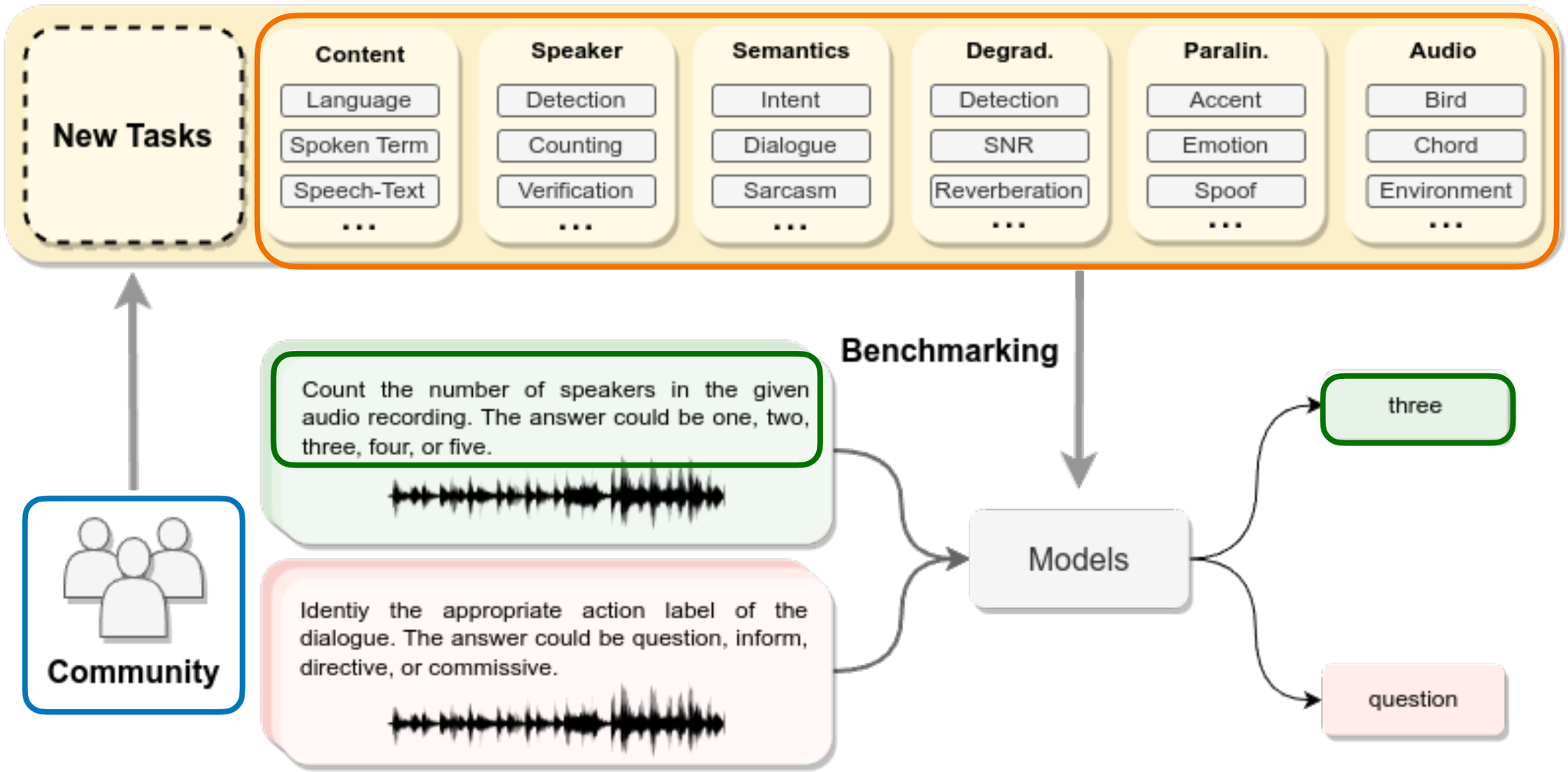

Benchmark Tasks

Content
Spoken Term Detection
Speech-Text Matching
Command Recognition

Paralinguistics
Accent Classification
Stress Detection
Emotion Recognition

Degradation
Noise Detection
Reverberation Detection
SNR Level Prediction

Semantics
Act Classification
Intent Classification
Sarcasm Detection

Speaker
Speaker Verification
Multi-Speaker Detection
Speaker Counting

Audio
Bird Sound Detection
Chord Classification
Environmental Sound Cls.

- Covers 6 dimensions, 33 tasks, and 55 evaluation instances.
- They are all classification tasks.

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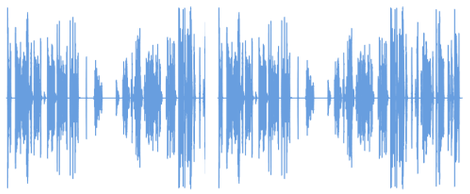
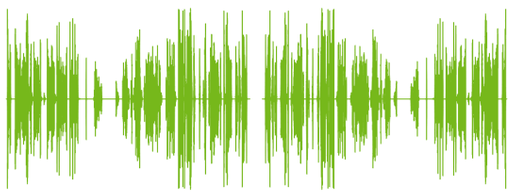
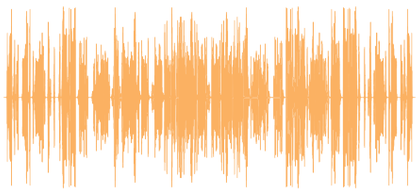
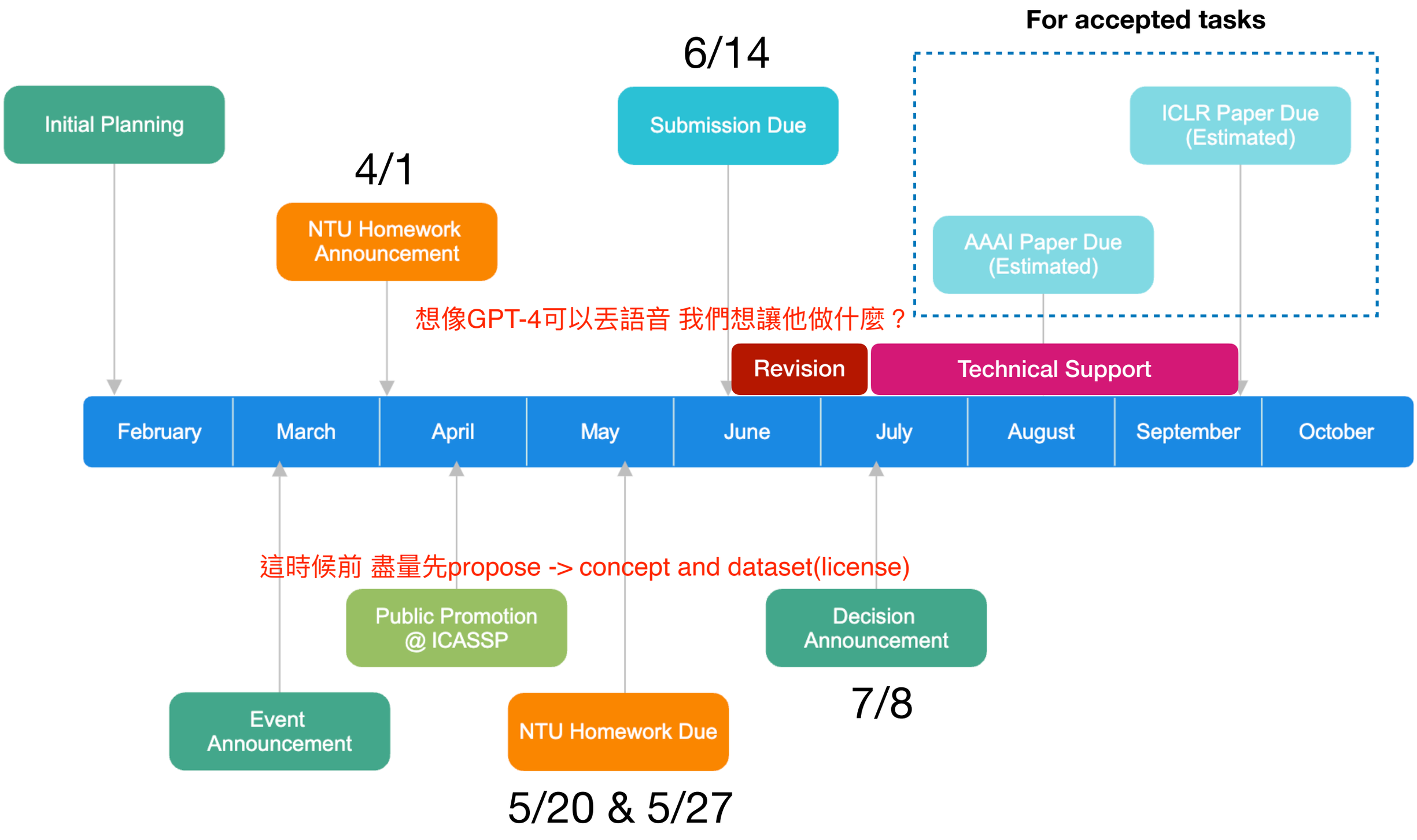
Task Formulation

- Example: Speaker count

Text Instruction	Audio Input	Output
Identify the total number of speakers in the audio. The answer could be one, two, three, four, or five.		one
Determine the number of speakers detected in the audio recording. The answer could be one, two, three, four, or five.		two
Count the distinct voices present in the audio recording. The answer could be one, two, three, four, or five.		three

Call for Tasks

Timeline



Task Submission

- Open a new issue on GitHub.
  - **Do not** continue to next step until you get our confirmation.
- Prepare your data & upload them to Huggingface.
  - Tutorials are available on GitHub.
- Open a pull request on GitHub.
  - You must finish this before 6/14 to be included for review.
- Revise your task if we ask you to do so (in review phase).

Regulations

- **Diversity** is more important than scale.
  - Data size: no more than 1 hour of audio.
  - Instructions: the more, the better.
- Carefully consider **task difficulty (related to acceptance).**
  - Can the task be solved by ASR+ChatGPT?
  - Can the task be solved in single step/model?
- Remember to check the dataset license.
- At most 5 tasks (and at least 1 task) for each person (not group).

Paper Authorship

- Your task may be rejected, but don’t be sad!
- Contributors of accepted tasks will be listed as co-authors.
- Authors are ordered by the number of accepted tasks.
- Authors should provide technical supports when necessary.

Appendix

Useful Links

- Dynamic-SUPERB GitHub repository
  - Task submission tutorial
  - Evaluation metric tutorial
- Dynamic-SUPERB Huggingface page
- Dynamic-SUPERB paper
- TA's email: cyhuang1997@gmail.com