# SOICT 2023

## THE 12TH INTERNATIONAL SYMPOSIUM ON INFORMATION AND COMMUNICATION TECHNOLOGY

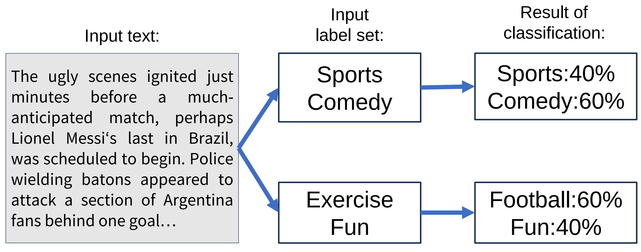
DECEMBER 7-8, 2023 | HO CHI MINH CITY, VIETNAM

# Dialogue Attributes' Zero-Shot Classification Based Anime Scene's Matching for Japanese Listening Test


Junjie SHAN shan@fc.ritsumei.ac.jp
Yangdi NI is0598eh@ed.ritsumei.ac.jp
Yoko NISHIHARA nisihara@fc.ritsumei.ac.jp
Ritsumeikan Global Innovation Research Organization Kusatsu, Shiga, Japan

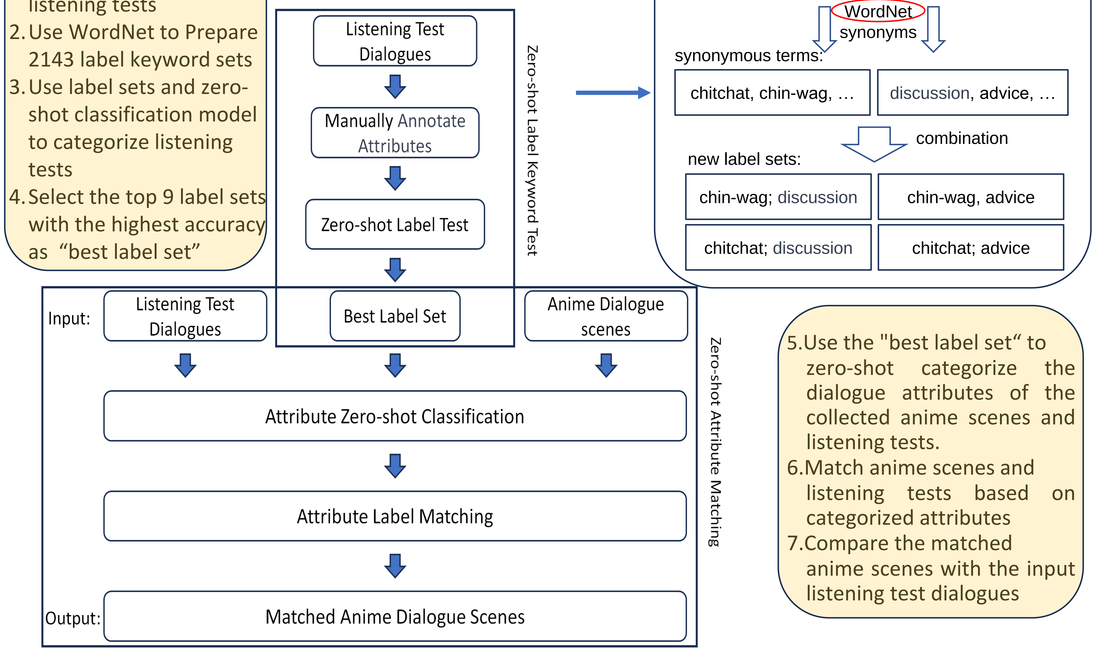

## Introduction

- **Traditional classification models:**
  1. Need massive manually annotated training data.
  2. Need many training source for model training
  3. Are not generalized well and task-specified.
- **Zero-shot Classification:**
  1. No-need training data, good generalization
  2. **Even for a same input text, when inputted label set is changed, the zero-shot classification result also may change as well**




## The flow of method

1. Manually label 90 JLPT listening tests
2. Use WordNet to Prepare 2143 label keyword sets
3. Use label sets and zero-shot classification model to categorize listening tests
4. Select the top 9 label sets with the highest accuracy as "best label set"




5. Use the "best label set" to zero-shot categorize the dialogue attributes of the collected anime scenes and listening tests.
6. Match anime scenes and listening tests based on categorized attributes
7. Compare the matched anime scenes with the input listening test dialogues

## Results

1. # of Anime Scenes: Matched anime scenes amount.
2. WCR (Sampling): Word Cover Rate with a sampling method.
3. Text-SIM (Sampling): Text similarity with a sampling method.
4. WCR (No-Sampling): Word Cover Rate with all matched anime scenes.
5. WCR-Eff (No-Sampling): Word Cover Rate Efficiency with all matched anime scenes.

Three matching three modes:

1. **Single-Attribute**: use only one original attribute type to match
1. **Double-Attribute**: Combines the original three attribute types two by two, use two attribute types to match
1. **Triple-Attribute**: use all three attribute types to match

| Mode | # of Anime Scenes | WCR (Sampling) | Text-SIM (Sampling) | WCR(No-Sampling) | WCR-Eff(No-Sampling) |
|---|---|---|---|---|---|
| Baseline (No Match) | 247,645 | 65.81% | 0.8204 | 97.10% | 3.92E-06 |
| Single-Attribute | 140,988 | 66.43%· | 0.8215* | 96.18% | 6.82E-06 |
| Double-Attribute | 70,834 | 67.2%** | 0.8225** | 95.22% | 1.34E-05 |
| Triple-Attribute | 29,362 | 67.79%** | 0.8238** | 94.51% | 3.22E-05 |

(*p<0.05,**p<0.01)

## ORGANIZERS

## SPONSORS