SUBGPT: AN AUTOMATED SUBTITLE-TEMPLATE GPT-POWERED TOOL

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Overview

- SubGPT is a tool that automates translations of subtitles using GPT.
- Generates semantically and culturally relevant translations from subtitle templates.
- Provides translations for any language that GPT supports.

Goal

To develop a fully automated, multi-language, and easy-to-use subtitling tool with applications for entertainment, education, and beyond.

SubGPT Implementation

- Customized prompts.
- Uses text-embedding-ada-002, a multilingual embedding model.
- API utilizes gpt3.5-turbo and gpt-4.
- Ability to specify the number of input tokens.
- Ability to set the cosine similarity threshold.

text-embedding-ada-002

- Produces numerical representations of text strings in different languages in the same vector space.
- Cosine similarity is a measure that can compare the similarity of two embeddings (dot product).
- Shown to perform better compared to models like BERT and Gecko when translating between English-Igbo.

Ada vs BERT

Sentence Pair Index	Dot Product
0	0.7868
1	0.8139
2	0.8487
3	0.7893
4	0.9116

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Cosine Scores for English-Igbo pairs Using Open AI ADA

Sentence Pair Index	Cosine Similarity
0	0.4178
1	0.4138
2	0.5272
3	0.4274
4	0.4904

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Cosine Scores for English-Igbo pairs Using Multilingual BERT

Impact

Advancement of audiovisual translation automation, workflow, and lower barriers for global media accessibility and cultural exchange.

Future work

- Generalization - test on diverse domains beyond entertainment for broader deployment.

- Quality assurance - integrate idiom monitoring. Leverage conversational AI advances.

- Prompt optimization

- User experience - enrich capabilities for post-editing machine outputs. Streamline workflows.

THANK YOU

Questions?