

Video Generation based on Text Data Analysis

Emergent Software Laboratory

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Agenda

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- Introduction
- Underlying Technology
- Proposed Method
- Experiments
- Experimental Results
- Conclusion and Future Work

Introduction

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- Increasing the importance of video content
- Using memes make it easy to creates videos
- Memes have a specific image

→ If the audience knows the meme, it helps them understand a video.

Introduction

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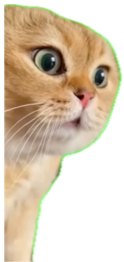
Girlfriend Cat



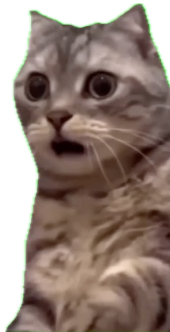
Sad Cat



huh Cat



Scolded Cat



Surprised Cat



Happy Cat

The Purpose of This Research

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- Extracting necessary information from text and generating videos using memes
- Even people who have never used a video production tool can easily create videos.

Underlying Technology

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- Adobe After Effects (AE)
 - Video production software provided by Adobe
- ExtendScript
 - A scripting language for Adobe products
 - Used to automate and extend Adobe Products
- GPT-3.5 Turbo
 - A language model developed by OpenAI that has extremely high natural language processing capabilities

Proposed Method

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Text analysis → Automatic video generation

1. Extracting information from text
2. Obtain the appropriate file path using a csv file that summarizes the material information
3. Create and execute ExtendScript based on file path and text information

Experiments

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- Run the script and examine the output
- Three types of input sentences
(temperature=0.7, max_tokens=100)
- Experiment 1, Experiment 2, Experiment 3 for each type of input sentence

Results show what was successful and what wasn't

Experimental Results

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- What worked
 - Extracting information from text
 - Generating and executing ExtendScript
- What didn't work
 - Proper selection of background images and meme material

Conclusion

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1. Analyzing the text
2. Determining background images and meme material
3. Generating a video using materials

Creating a script to automate the above

Future Work

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- Output Stability
 - Finding ways to properly complement missing information and accurately determine the path of materials
- Automatic background image generation

Additional Resources

Experiment1

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Input Sentence: I got caught in a heavy rain while walking outside.

Time: While going out

Place: In the city

State of Characters: Getting wet in the rain

Text Information: Got wet in the rain

Background Image File Path: /Users/shun/Documents/みんちりえ_データ/商店街 | みんちりえ/商店街（夕方）.jpg

Video Material File Path: /Users/shun/Documents/猫ミーム用素材/cat_meme/濡れた猫.mp4

Experiment1

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Experiment2 Failure Example

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Input Sentence: When it comes to buying from vending machines, it's definitely limited editions.

Time: Unknown

Place: In front of a vending machine

State of Characters: Shopping

Text Information: Purchased a limited edition item

Background Image File Path: **File path not found**

Video Material File Path: /Users/shun/Documents/猫ミーム用素材
/cat_meme/お菓子食べる猫.mp4

Experiment2 Success Example

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Input Sentence: When it comes to buying from vending machines, it's definitely limited editions.

Time: Unknown

Place: In front of a vending machine

State of Characters: Shopping

Text Information: Buying a limited edition item

Background Image File Path: /Users/shun/Documents/みんちりえ_データ/街中の自動販売機 | みんちりえ/街中の自動販売機（日中）.jpg

Video Material File Path: /Users/shun/Documents/猫ミーム用素材/cat_meme/お菓子食べる猫.mp4

Experiment2 Success Example

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Experiment3 Failure Example

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Input Sentence: Taking a break while studying makes you feel better.

Time: While studying

Place: Home study

State of Characters: Tired from studying

Text Information: Taking a break

Background Image File Path: /Users/shun/Documents/みんなちりえ_データ/パソコン部屋 | みんなちりえ/パソコン部屋 (日中) .jpg

Video Material File Path: File path not found

Experiment3 Success Example

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Input Sentence: Taking a break while studying makes you feel better.

Time: While studying

Place: Study desk

State of Characters: Feeling better after taking a break from studying

Text Information: Taking a break

Background Image File Path: /Users/shun/Documents/みんなちりえ_データ/学校のグラウンド | みんなちりえ/学校のグラウンド (日中) .jpg

Video Material File Path: /Users/shun/Documents/猫ミーム用素材/cat_meme/WOP猫.mp4

Experiment3 Success Example

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