

NAVIGATING THE FUTURE

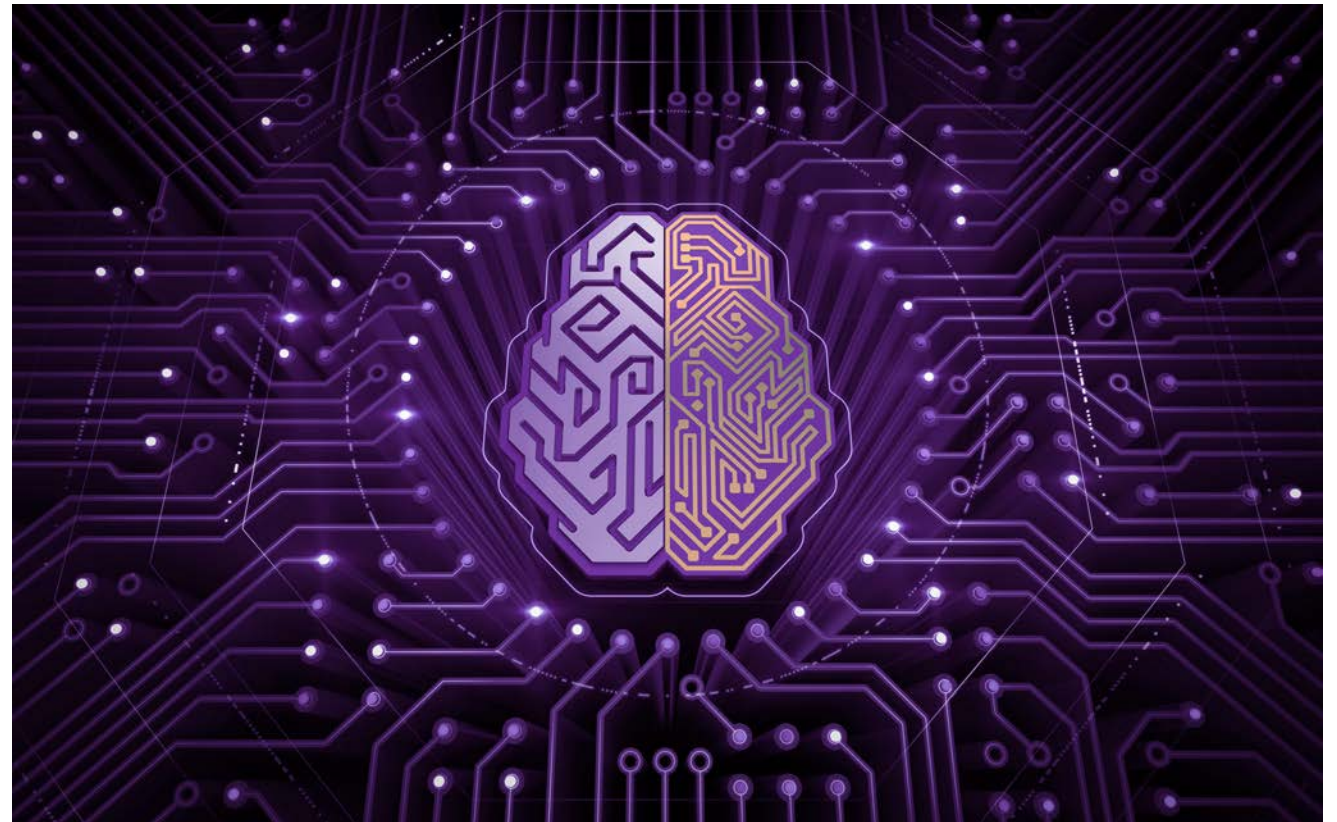
HDA
TECH RETREAT 2023

Year in Review of New AI/ML
Developments for Media
Production with a
Concentration on Semantic
Search

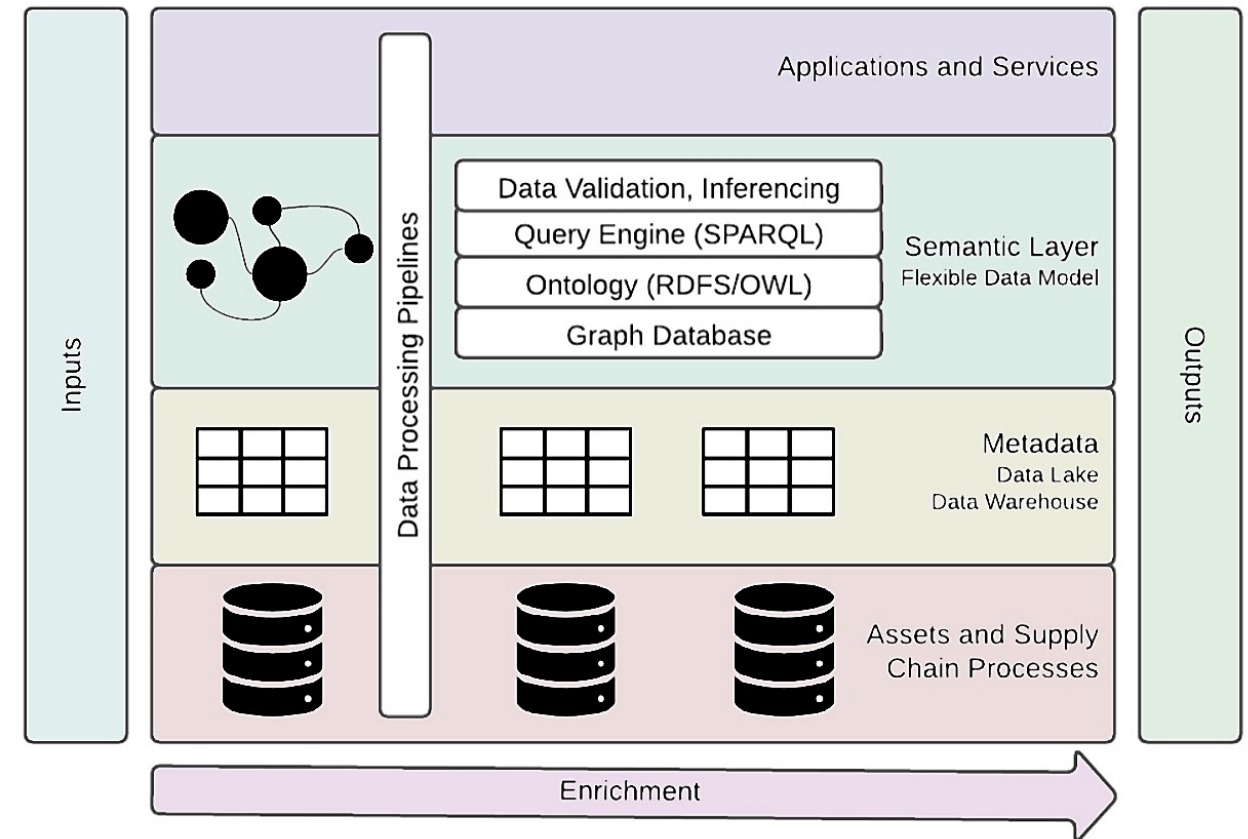
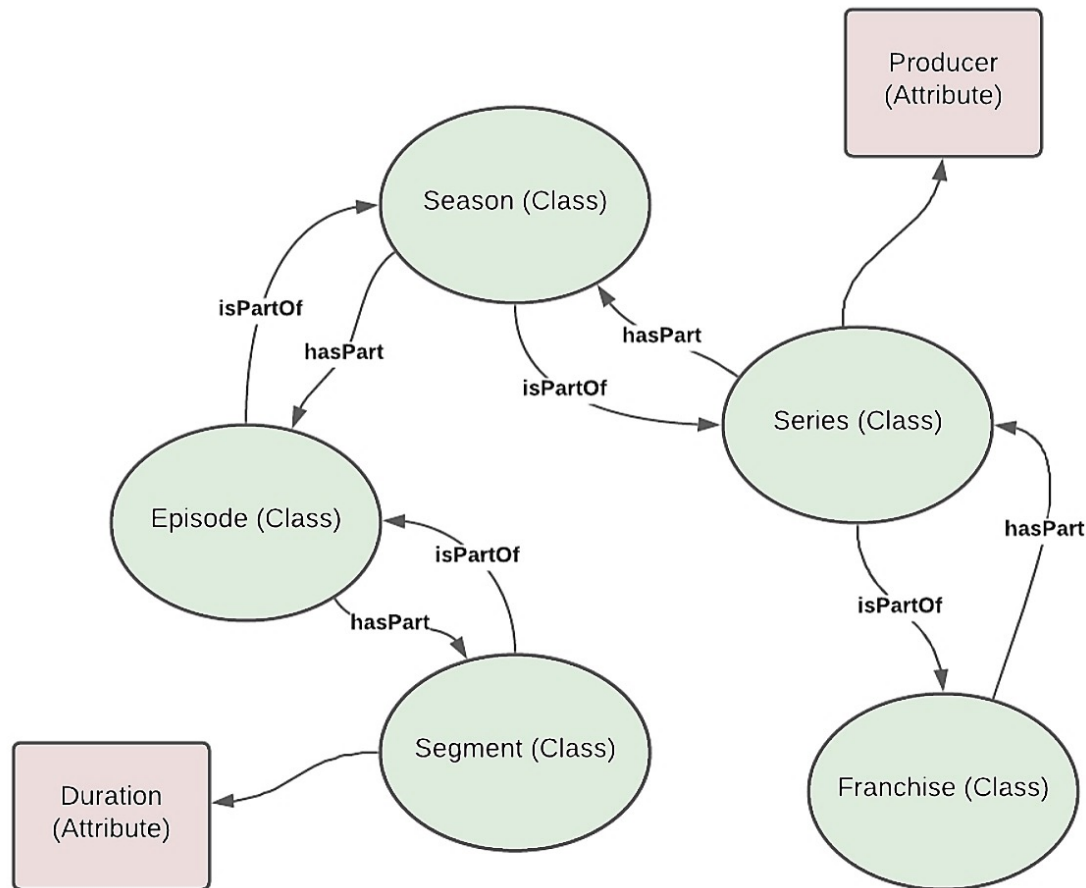
Rob Gonsalves, Avid

Year in Review of New AI/ML Developments for Media Production With a Concentration on Semantic Search

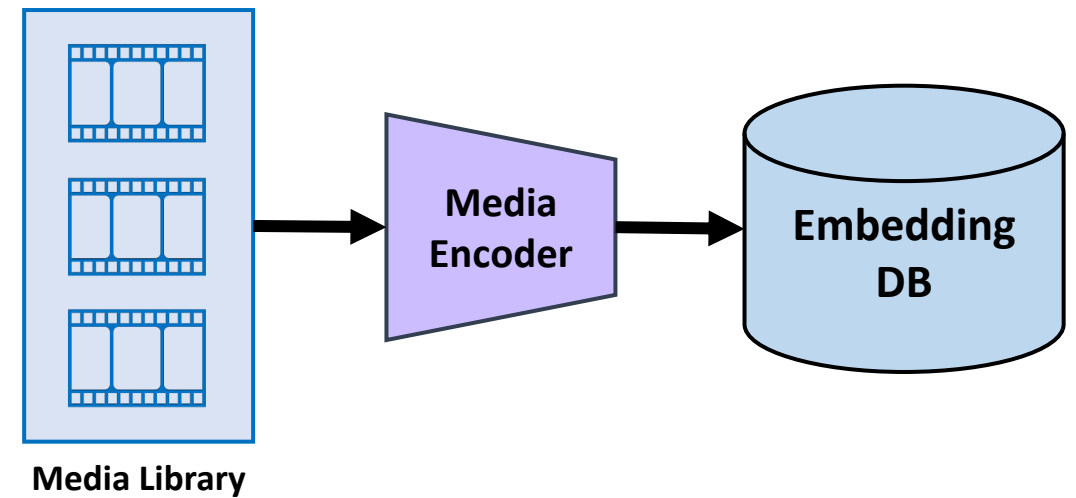
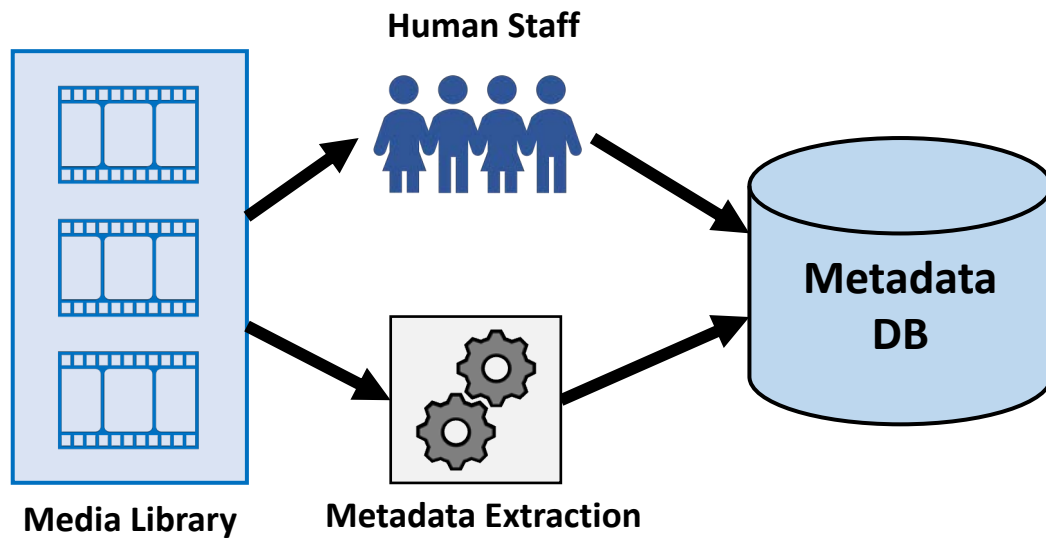
- Background on Using AI/ML for Semantic Media Search
- What's New in Semantic Search
- Other Recent AI/ML Developments
- Walkthrough Using the New Tools



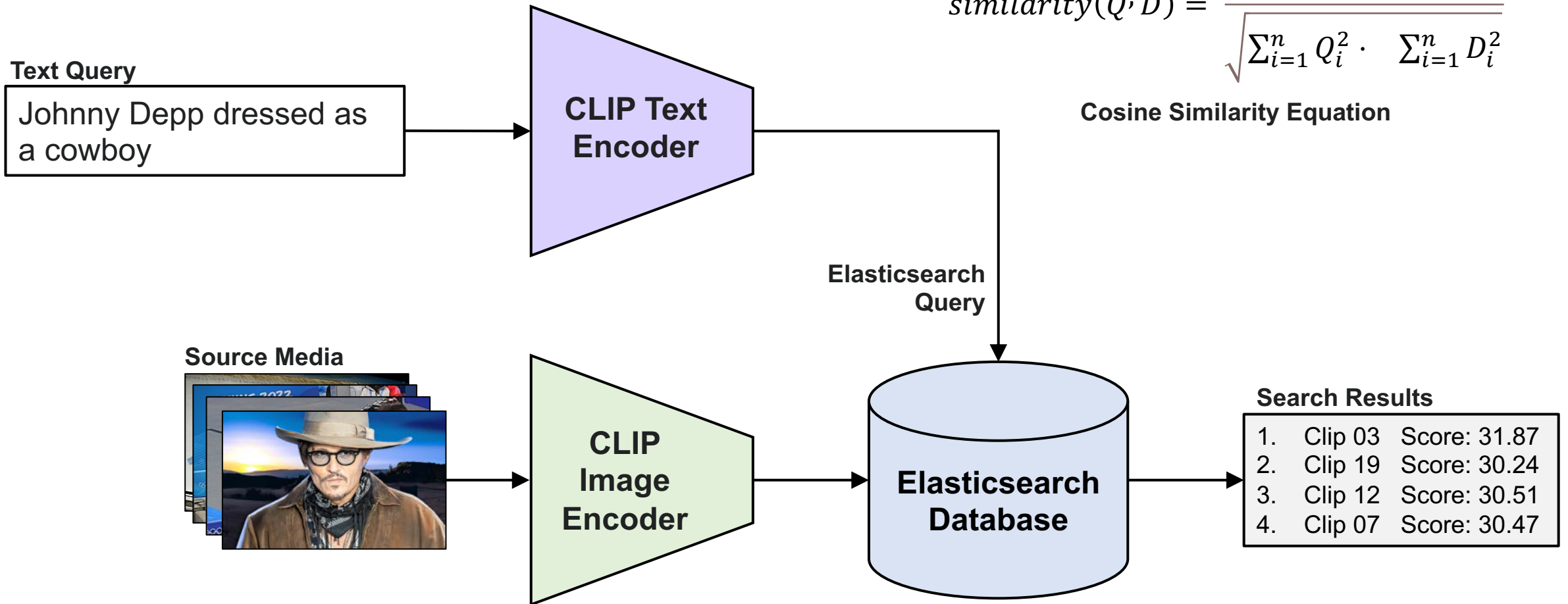
Using Knowledge Graphs for Asset Libraries



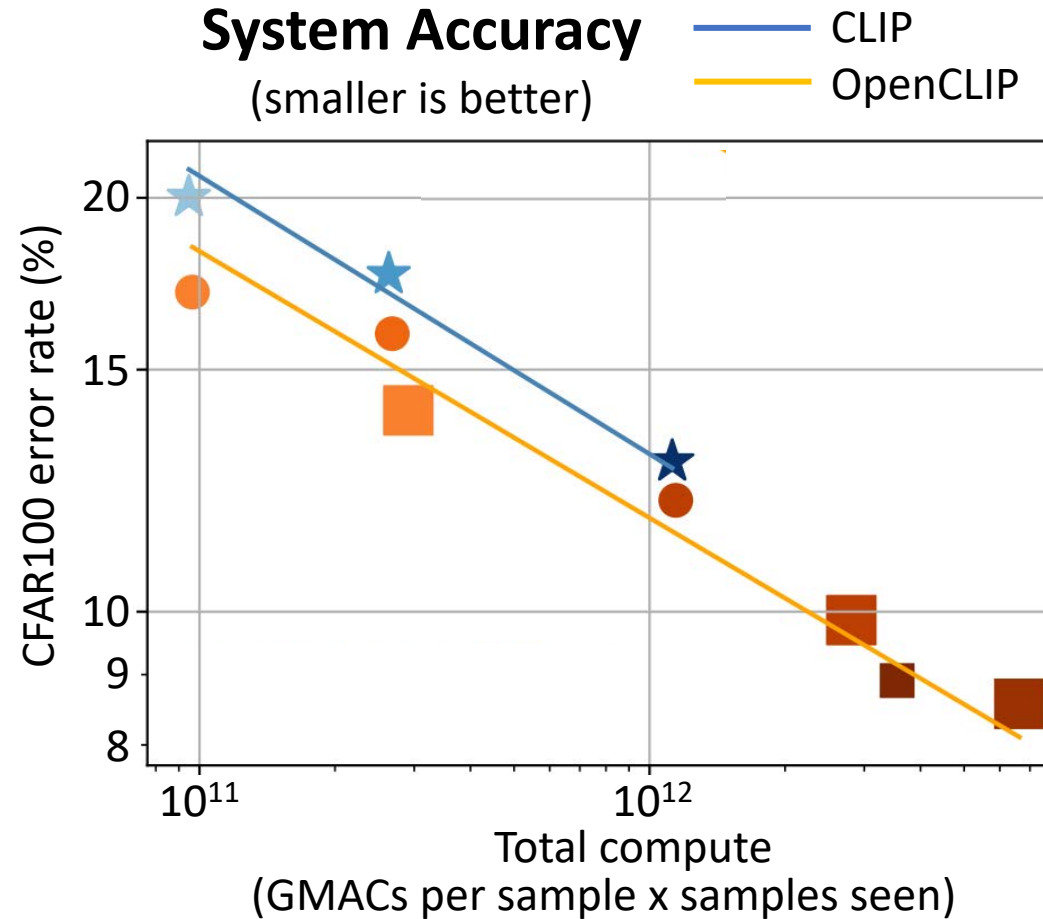
Metadata-based Search vs. Semantic Embedding Search



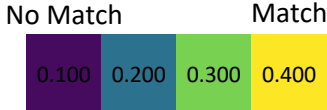
Semantic Image Search



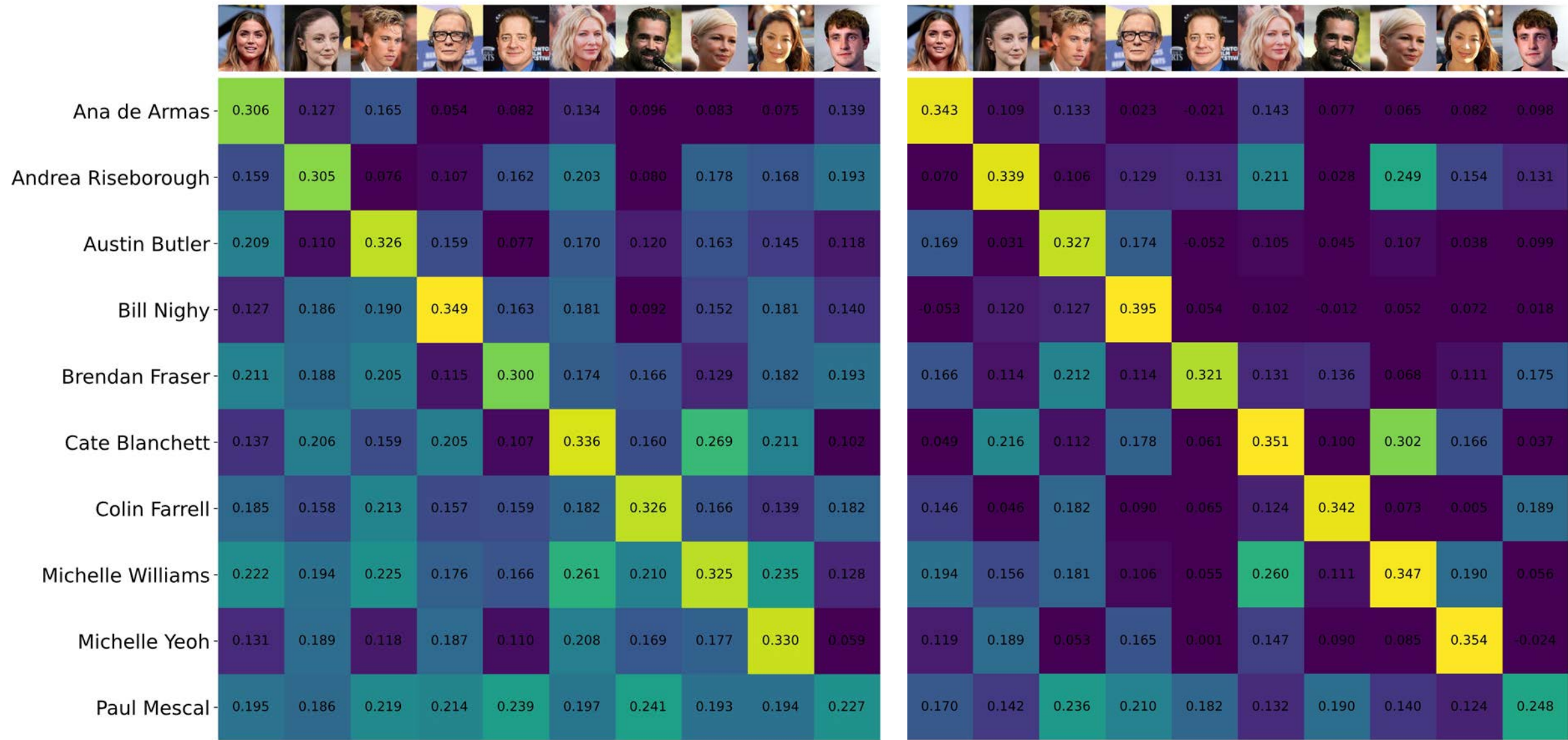
OpenCLIP Encoders



Comparison of CLIP and OpenCLIP



Text to Image Similarity



CLIP Results

OpenCLIP Results

Images Source: Wikimedia Commons

Comparison of CLIP and OpenCLIP

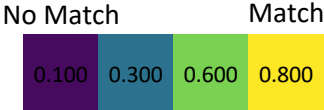
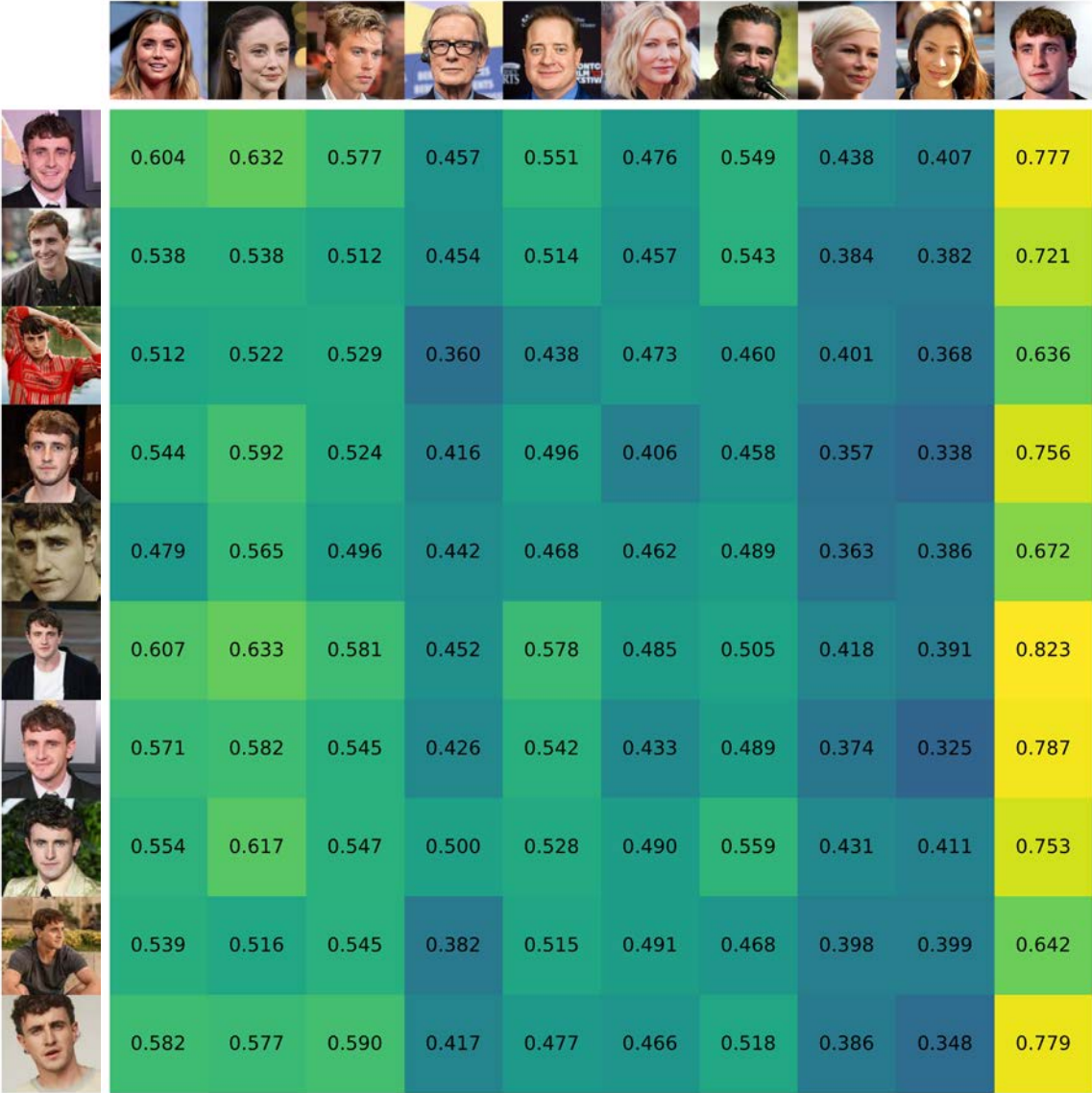
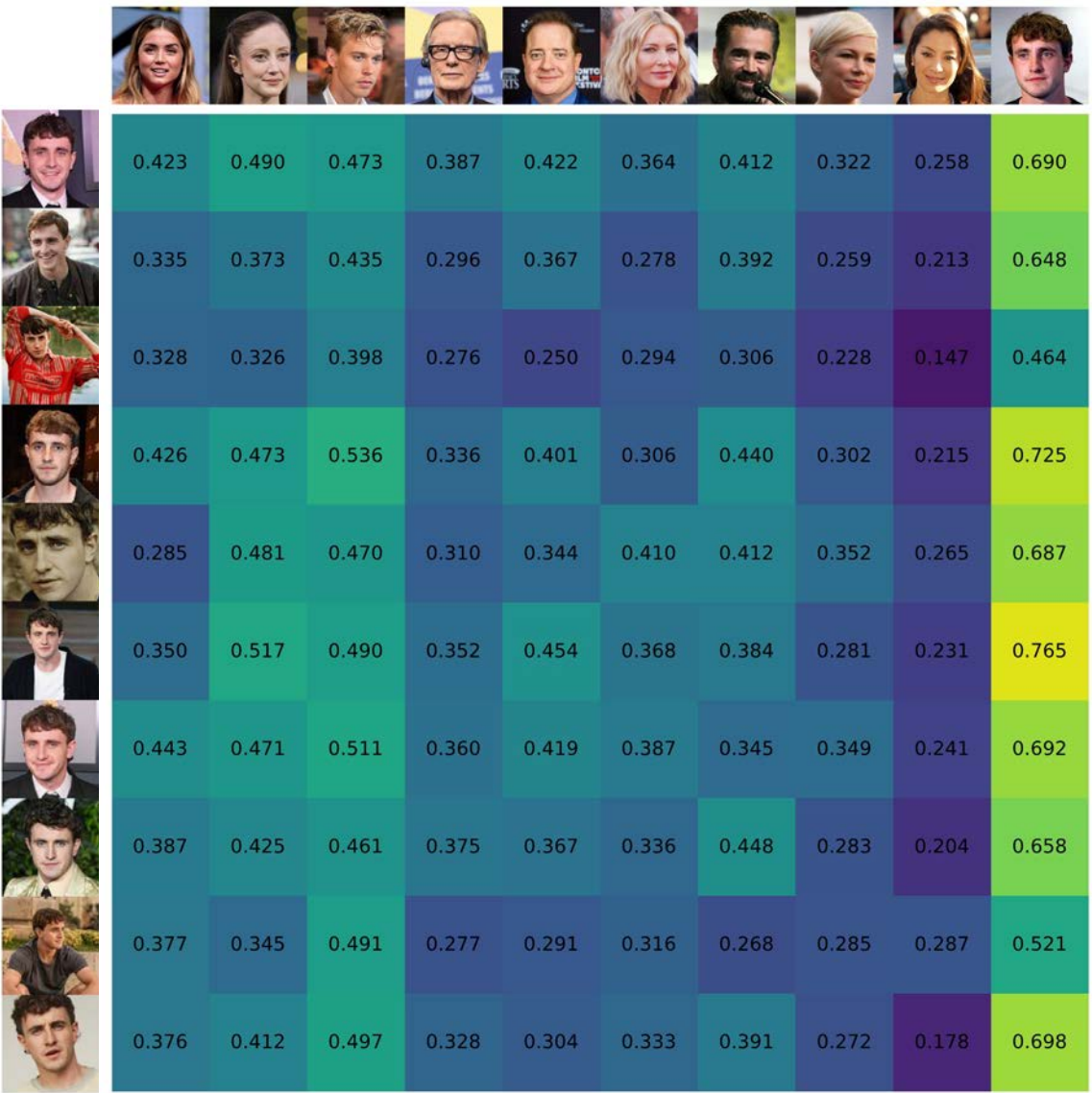


Image to Image Similarity

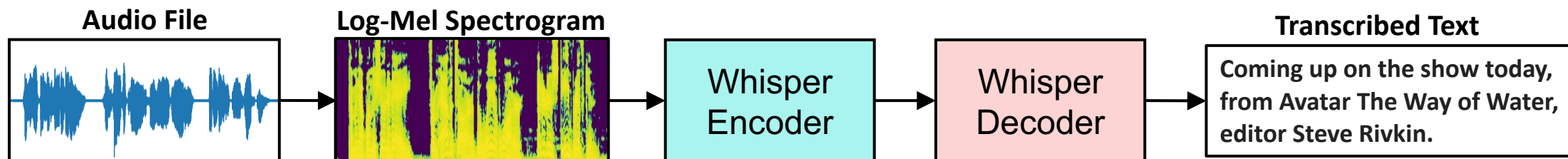


CLIP Results



OpenCLIP Results

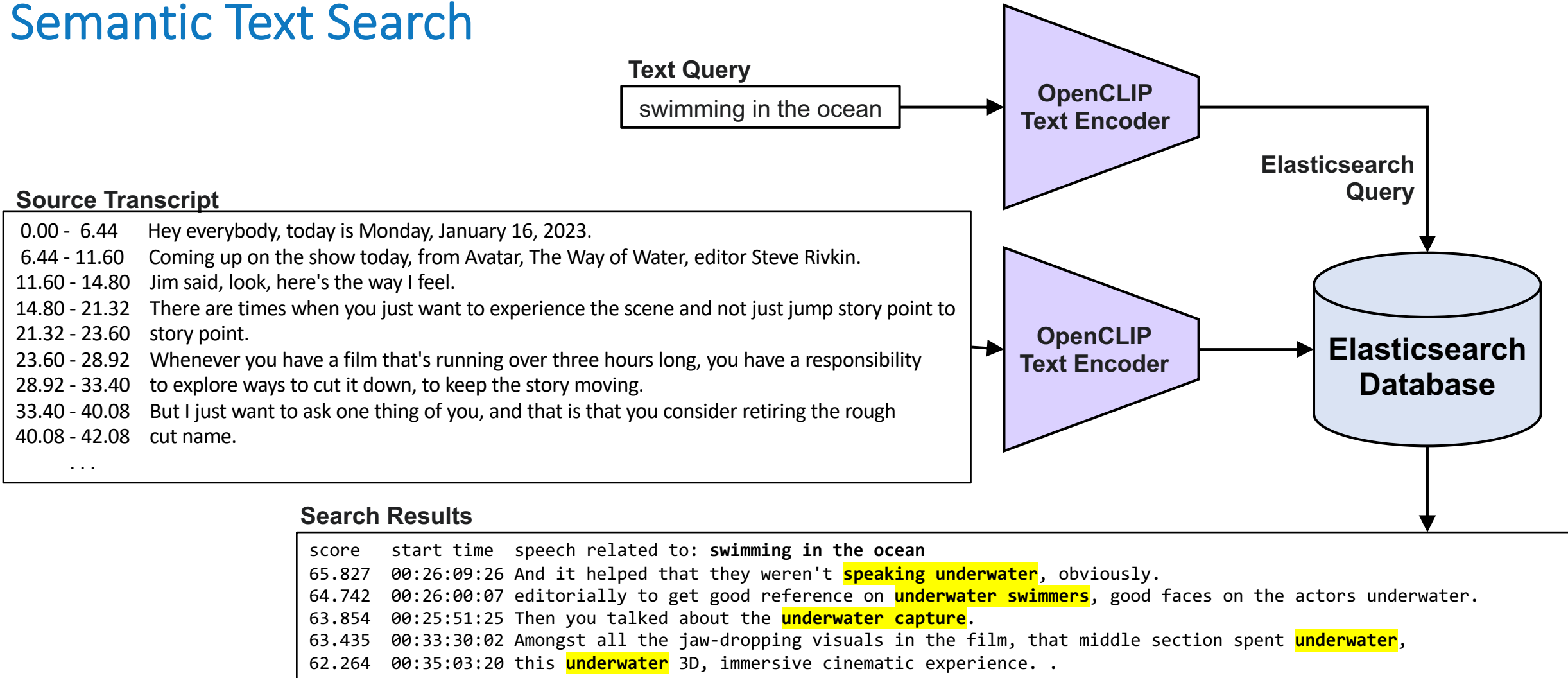
Whisper Speech-to-text Model from OpenAI



Transcription Word Error Rate

Dataset	Wav2vec 2.0 Large	Whisper Large V2
Common Voice	29.9	9.0
Fleurs En	14.6	4.4
LibriSpeech Clean	2.7	2.7
LibriSpeech Other	6.2	5.2

Semantic Text Search



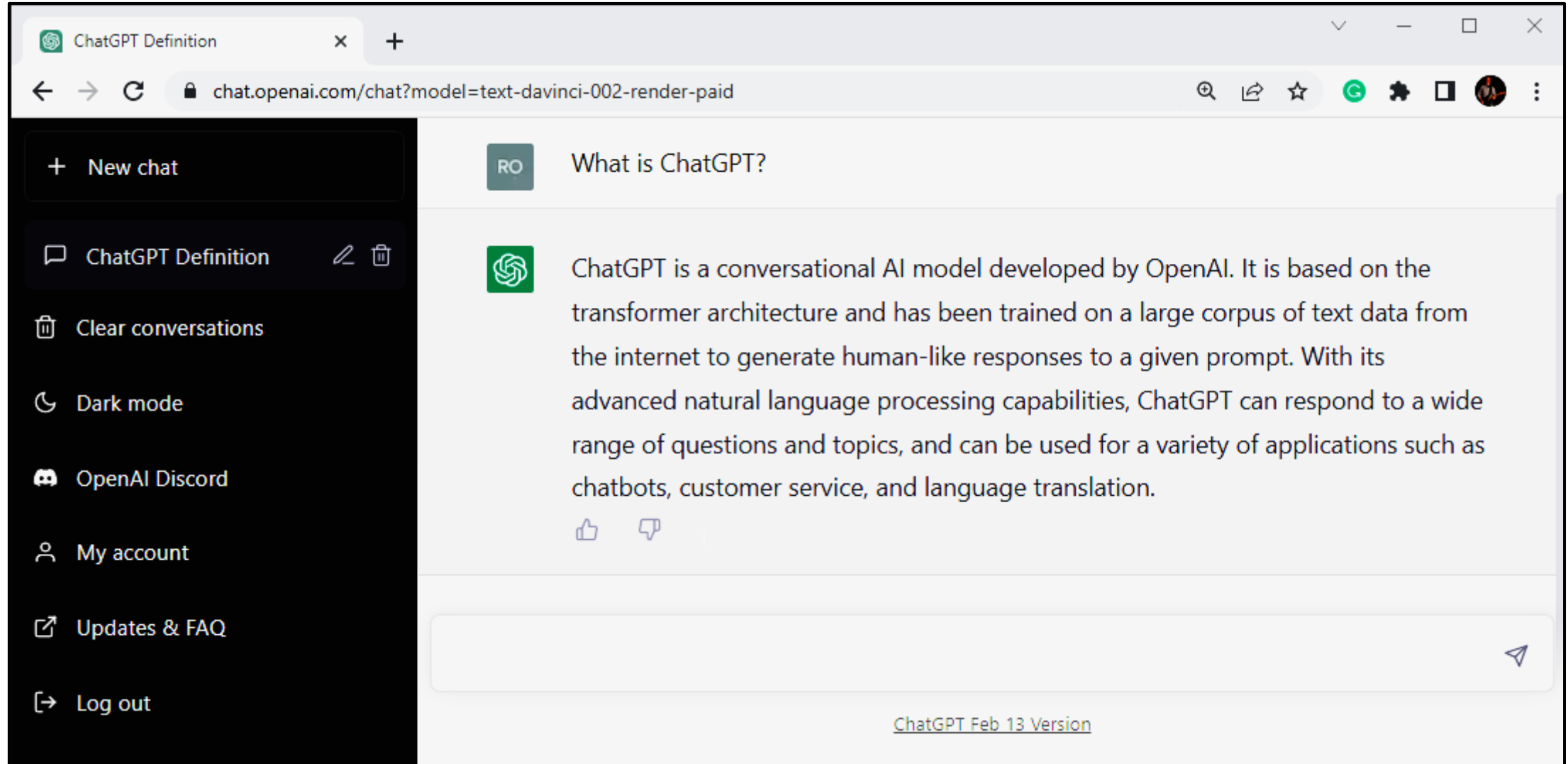
Alignment – The Ethics of AI and ML



OpenAI	https://openai.com/blog/our-approach-to-alignment-research
Microsoft	https://www.microsoft.com/en-us/ai/responsible-ai
Amazon	https://aws.amazon.com/machine-learning/responsible-machine-learning
Google	https://cloud.google.com/responsible-ai

Large Language Model - ChatGPT

Fine-tuned with human feedback and evaluation



Source: <https://openai.com/blog/chatgpt/>

Developing a Movie Concept With ChatGPT

Initial Discussion: Key Qualities

RobG

What are the key qualities of a successful Hollywood movie?



There are several key qualities that are often associated with successful Hollywood movies, including:

1. **Strong Storyline:** A well-written and engaging story that captivates the audience is essential.
2. **Memorable Characters:** Characters that are well-developed, relatable, and memorable are important for keeping the audience invested in the story.
3. **Visual Effects:** In today's world of film-making, visual effects play a big role in attracting audiences to the theaters. They can be used to create stunning and believable worlds, characters, and creatures.
4. **Music and Soundtrack:** A good soundtrack can enhance the overall experience of a movie, adding emotion and energy to key scenes.
5. **Marketing and Promotion:** Effective marketing and promotion can help build buzz for a movie and attract a large audience.
6. **Star Power:** Having popular and well-known actors in a movie can also help draw audiences to theaters.
7. **Timing:** Releasing a movie at the right time can also be key to its success. For example, releasing a summer blockbuster during the summer months can help capitalize on the desire for escapist entertainment.

These are some of the key qualities that can contribute to a successful Hollywood movie, but it's important to note that there is no formula for guaranteed success, as every movie is unique and faces its own challenges.

Developing a Movie Concept With ChatGPT

Initial Discussion: List Genres of Movies

RobG

List five genres.



Sure, here are five popular movie genres:

1. **Action/Adventure:** This genre is characterized by high-stakes, fast-paced storylines that often involve physical challenges and intense battles.
2. **Romance:** This genre focuses on the relationship between two characters and their emotional journey, often ending with a happy resolution.
3. **Comedy:** This genre is designed to entertain and make the audience laugh through humor, satire, and witty dialogue.
4. **Drama:** This genre is characterized by serious and realistic storytelling that often explores complex social and psychological issues.
5. **Science Fiction/Fantasy:** This genre often takes place in a futuristic or imaginary world and explores themes such as technology, space, and the supernatural.

Developing a Movie Concept With ChatGPT

Creating Titles and Plot Summaries

RobG

Create five working titles and storylines for science fiction/fantasy movies.



Sure, here are five working titles and storylines for science fiction/fantasy:



"The Time Traveler's Dilemma": A time traveler must navigate through different eras to prevent a catastrophic event from happening, all while facing the consequences of his actions in the past.



"Galactic Rebellion": In a distant future, a group of rebels must band together to overthrow a tyrannical government that controls the galaxy.

3. **"The Portal":** A group of scientists discover a mysterious portal that leads to parallel universes, and must navigate through these strange and dangerous new worlds to find their way back home.



"The Magician's Apprentice": A young, inexperienced magician must master his powers and save the kingdom from a dark sorcerer who threatens to destroy everything he holds dear.



"The Last Humans": In a post-apocalyptic world, a small group of humans must band together to survive against the odds and find a way to restore their species.

Developing a Movie Concept With ChatGPT

Creation of Characters

RobG

Who are the characters in The Portal?



Here are a few potential characters for "The Portal":

1. **Protagonist:** A young, ambitious scientist who is part of the team that discovers the portal. They are driven by a desire to explore and understand the strange new worlds that lie beyond.
2. **Mentor:** An experienced scientist and leader of the team who guides the protagonist through their journey. They are knowledgeable and wise, but also carry their own secrets and motivations.
3. **Love Interest:** A fellow scientist who is part of the team and catches the protagonist's eye. They are brave and resourceful, and their relationship with the protagonist develops as they explore the parallel universes together.
4. **Antagonist:** A rival scientist who is envious of the protagonist's success and will stop at nothing to claim the discovery of the portal for themselves.
5. **Sidekick:** A quirky, yet lovable character who provides comic relief and assists the protagonist in their journey.
6. **Alien Guide:** An alien being who the team encounters in one of the parallel universes. They possess unique abilities and knowledge, and offer guidance to the protagonist as they navigate this strange new world.

These are just a few potential characters for "The Portal", and the final cast could differ based on the specific story and world-building that the film-makers choose to create.

Developing a Movie Concept With ChatGPT

Creation of Characters

RobG

Cast these parts with known actors and actresses.



Sure, here are some actors and actresses that could potentially be cast in the main roles in "The Portal":

1. **Timothee Chalamet** as Ethan (Protagonist):
2. **Sandra Bullock** as Dr. Laura Parker (Mentor)
3. **Zendaya** as Maya (Love Interest)
4. **Benedict Cumberbatch** as Dr. Richard James (Antagonist)
5. **John Boyega** as Leo (Sidekick)
6. **Lupita Nyong'o** as Zara (Alien Guide)

These are just suggestions for actors and actresses who could potentially be cast in the main roles in "The Portal." The final casting choices would depend on the creative vision of the film-makers and the availability of the actors.

Drafting a Screenplay With ChatGPT

Write the First Scene

RobG

Write the script for the first scene.



Here's a script for the first scene of Act 1 of "The Portal":

FADE IN: INT. SCIENCE LAB - DAY

The camera shows the entire lab, filled with scientific equipment and papers scattered on desks. We see a group of scientists gathered around a computer screen, with ETHAN at the center.

ETHAN (excitedly) **Guys, check this out! The readings are off the charts!**

DR. PARKER (impressed) **Ethan, this is incredible!**

ETHAN (proudly) **I've never seen anything like it.**

LEO (jokingly) **Well, that's because you haven't seen me dance yet!**

The team is laughing, with ETHAN and MAYA at the center

DR. PARKER (thoughtfully) **We need to run more tests, but I think we may have discovered something truly groundbreaking.**

The team erupts into excited chatter as the camera zooms in on Ethan's face, filled with wonder and excitement.

ETHAN (whispering to himself) **This is only the beginning.**

FADE OUT.

Storyboard Creation with AI/ML

Images by Stable Diffusion, DALL-E 2, Midjourney

Prompt: stylized black and white, pen and ink sketch with shading, of Timothee Chalamet as an ambitious scientist, dressed in a lab coat, cluttered laboratory, looking at a computer screen



Stable Diffusion (DreamStudio)



DALL-E 2



Midjourney

Image size: 512x512 to 1024x1024

Aspect Ratio: Variable (in increments of 64 pixels)

Cost per image: US\$0.094 (DreamStudio)*

Image size: 1024x1024

Aspect Ratio: 1:1 (variable with outpainting)

Cost per image: US\$0.032

Image size: 256x256 (optional upsize to 1024x1024)

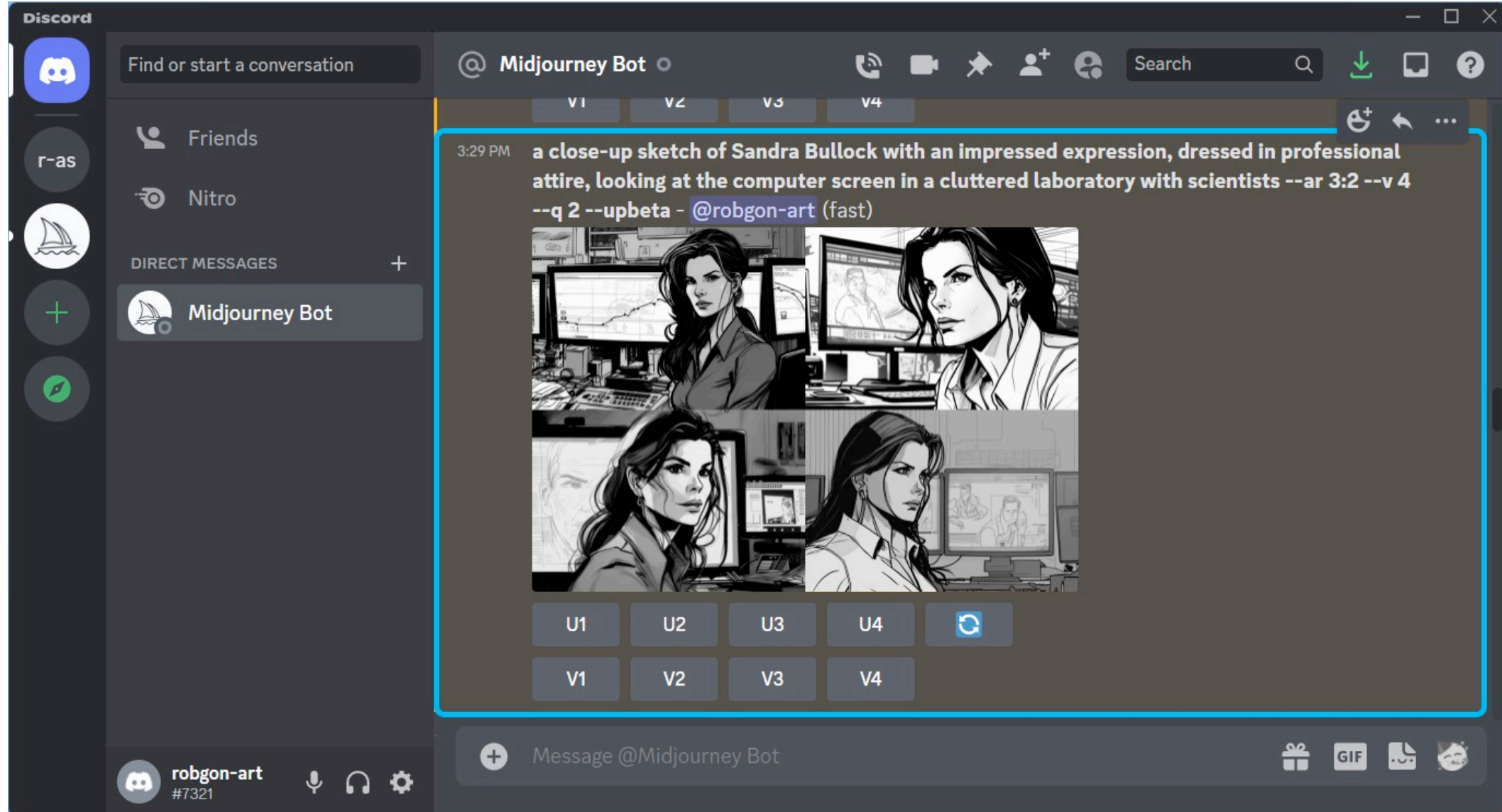
Aspect Ratio 2:3, 1:1, 3:2 (version 4)

Cost per image: US\$0.133

*Open-source Stable Diffusion is free

Text-to-image Diffusion Model: Midjourney

Available at <https://www.midjourney.com/home>



Storyboard Creation with Midjourney

Text by ChatGPT, Images by Midjourney



FADE IN: INT. SCIENCE LAB - DAY
(Pan across a cluttered lab, a group of scientists gathered around a computer screen)



ETHAN (excitedly)
Guys, check this out! The readings are off the charts!



DR. PARKER (looks at the screen, impressed)
Ethan, this is incredible!



ETHAN (proudly)
I've never seen anything like it.



LEO (jokingly)
Well, that's because you haven't seen me dance yet!



INT. SCIENCE LAB
(The team is laughing, with ETHAN and MAYA at the center)



DR. PARKER (thoughtfully)
We need to run more tests, but I think we may have discovered something truly groundbreaking.



ETHAN (whispering to himself)
This is only the beginning.

Adjusting the Title of the Movie

Send Back Some Notes

RobG

Suggest some names for Zara's planet?



Sure, here are some potential names for Zara's planet in "The Portal":

Arcanis, Xenith, Lumina, Nebula, Galaxia, Azura, Cosmia, Terra Nova, Orionis, Vega Prime

These are just suggestions for potential names for Zara's planet in "The Portal." The final name could be chosen based on the creative vision of the film-makers and the specific world-building they want to create.

RobG

Work the name Xenith into the title.



Here are a few potential titles that incorporate the name "Xenith":

1. "The Portal to Xenith"
2. "Xenith: A Journey Through the Portal"
3. "Exploring Xenith: The Portal Adventure"
4. "Xenith: Beyond the Portal"
5. "Discovering Xenith: An Epic Journey Through the Portal"

These are just a few potential titles that incorporate the name "Xenith." The final title for the film could be chosen based on the creative vision of the film-makers and the tone and themes of the story.

Predicting the Movie Reviews

Getting Hypothetical Rotten Tomato Scores

RobG [Asking ChatGPT] What would the Rotten Tomatoes score be?



As an AI language model, I don't have the ability to predict the future or the reception of a movie. The Rotten Tomatoes score for "Xenith: Beyond the Portal " would depend on many factors, including the quality of the film, the opinions of critics and audiences, and the cultural and historical context in which it is released. It's impossible to predict the Rotten Tomatoes score for a hypothetical film with certainty.

RobG [Asking GPT-3] What would the Rotten Tomatoes score be?



88%



94%



CRITICS CONSENSUS

Xenith: Beyond the Portal is an exciting and imaginative sci-fi adventure that takes viewers on a thrilling journey through parallel universes. Featuring a strong cast and captivating visuals, this film is sure to please sci-fi fans and newcomers alike.



AUDIENCE SAYS

Xenith: Beyond the Portal is a thrilling ride through parallel universes that is sure to entertain and excite viewers of all ages. The cast is strong, the visuals are captivating, and the story is both intriguing and engaging.

Key Takeaways

- Using AI/ML for Semantic Media Search
 - Using Knowledge Graphs for asset libraries
 - OpenCLIP from LAION for improved results
 - Image-to-image Semantic Search
 - Whisper for speech-to-text transcriptions
 - Semantic text search with OpenCLIP
- Other New AI/ML Developments
 - Ongoing research for responsible AI
 - ChatGPT for interactive Q&A and generation
 - Text-to-image models like Midjourney
- Any Questions?



medium.com/@robgon



[@Rob_Gonsalves_](https://twitter.com/Rob_Gonsalves_)

The logo for HDA, featuring the letters 'H', 'D', and 'A' in a stylized, bold, white font. The 'H' and 'D' are connected, and the 'A' is a simple, wide character. The background is a dark blue gradient with a pattern of glowing dots in blue, purple, and orange, creating a digital or data-like atmosphere.

HDA

TECH RETREAT 2023