



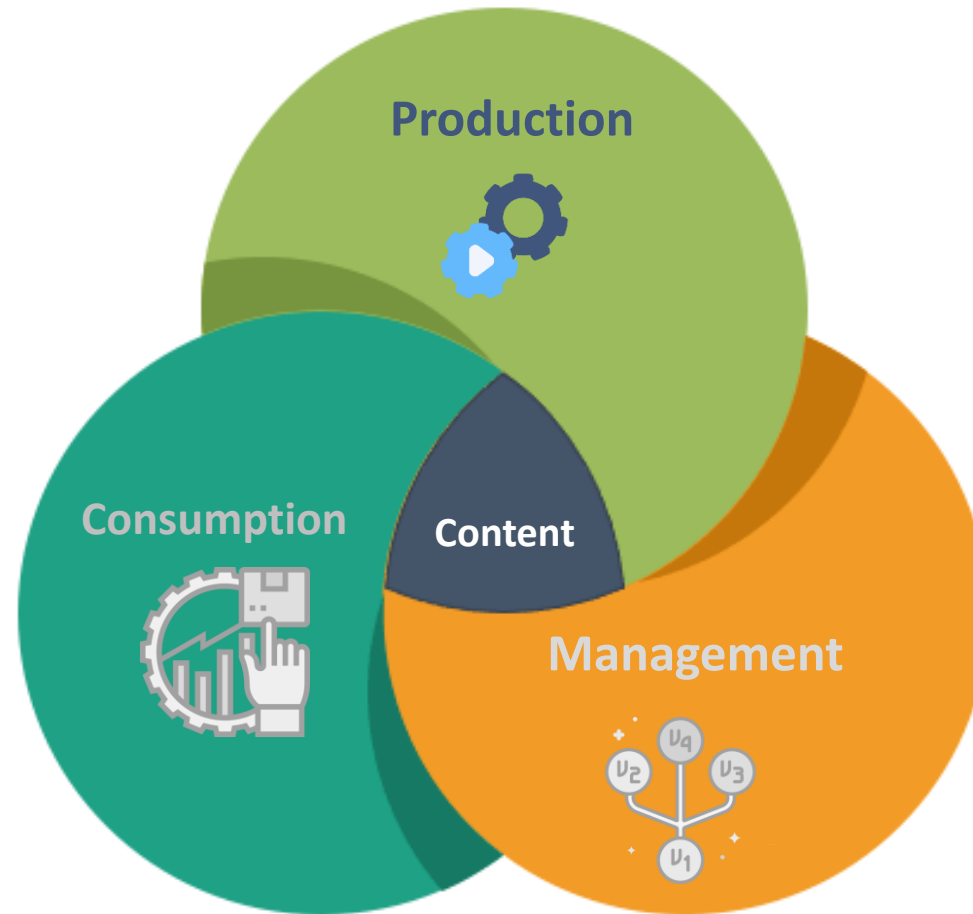
AI Opportunities in Content Production, Management and Consumption



Dr. Mohieddin Moradi

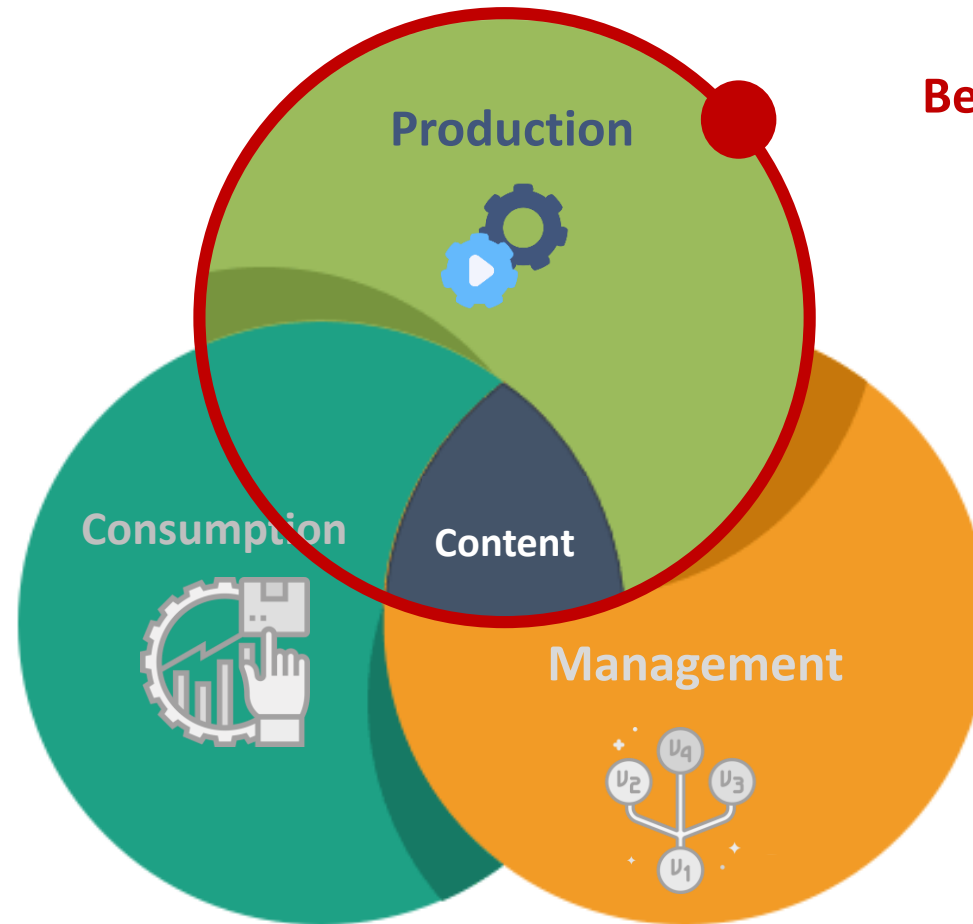
IRIB. Research & Develop Department





The **amount of time needed for content cataloging** is reduced to almost “**real-time**” thanks to AI, which applied to day-to-day work at a **regular TV station**.

Content Production by AI:



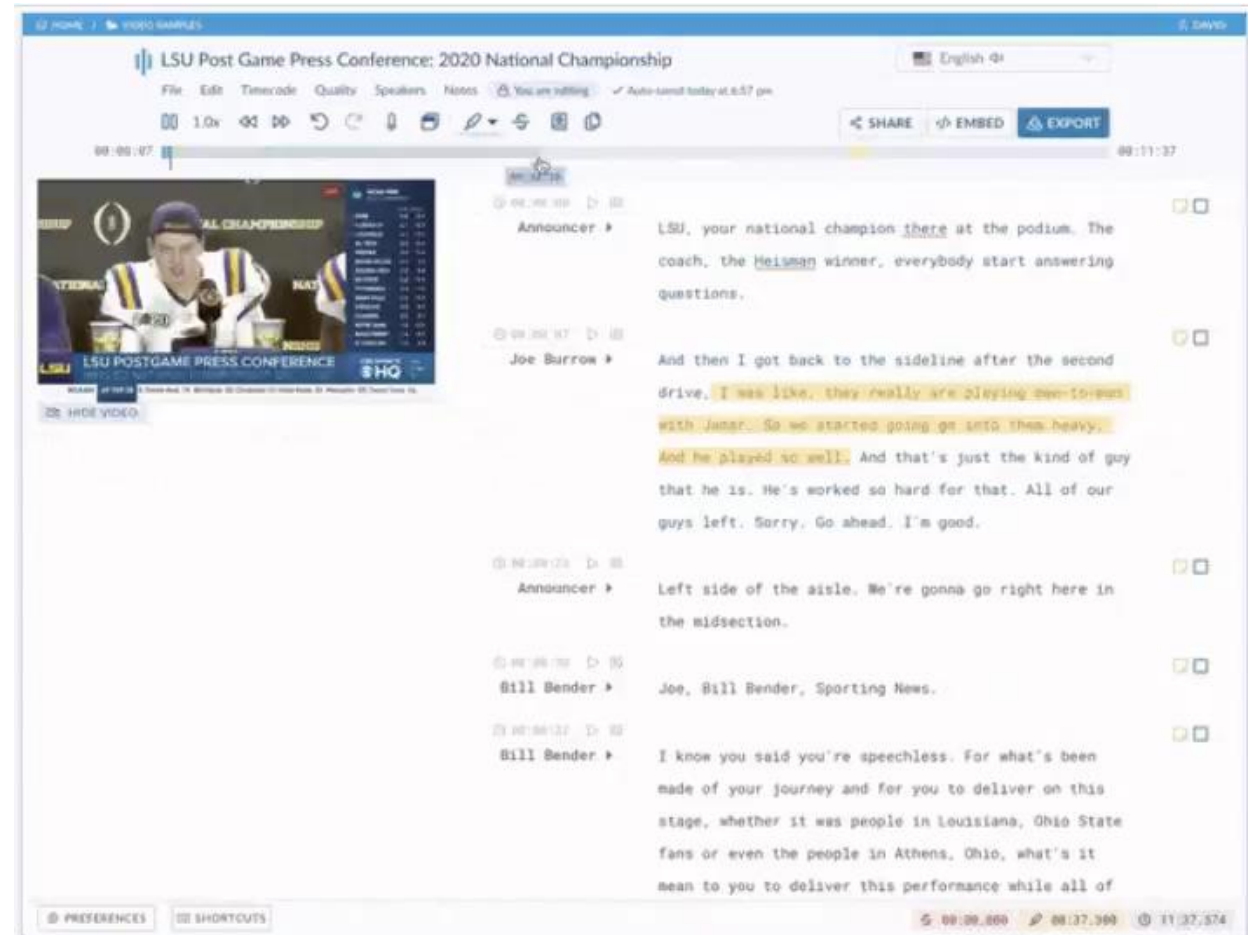
Before any content is captured!

Content Production by AI:

1

Transcription

- Using **speech to text** technology
- Enable journalists to **review recordings**, make notes from research calls and ...



Content Production by AI:

2

Summarization

- Enables **long transcripts** or other notes to be distilled down for **rapid reading**.

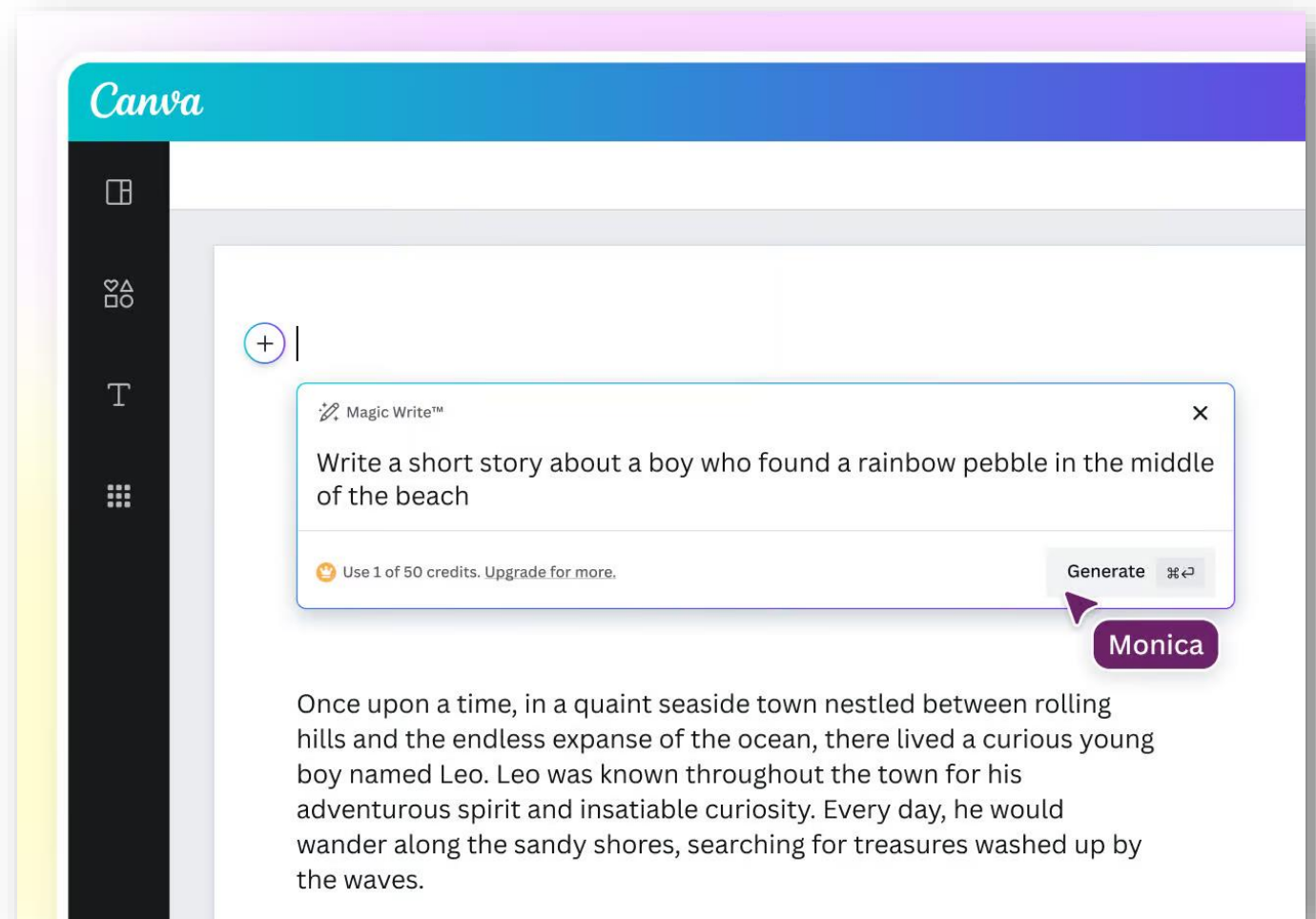
Summarizer	AI Summarizer	Summarized Text
Summarizing tools are nothing new as they have been around for a while. However, AI summarizers are a recent invention. A simple Artificial Intelligence integration has revolutionized the way in which summarizers work. Standard summarizing tools would simply eliminate or remove certain sentences from a write-up to shorten its length. This removal is random and can damage the intent of the write-up. However, unlike standard tools that randomly truncate content, an AI summarizer intelligently condenses information without compromising the write-up's intent. To help you understand how these tools work, here is a breakdown of the processes		A simple Artificial Intelligence integration has revolutionized the way in which summarizers work. Unlike standard tools that randomly truncate content, an AI summarizer intelligently condenses information without compromising the write-up's intent. Some modern tools even provide the option to select the format of the summary (paragraph, bullet points, etc.)
 Words:178 english 		<button>Check Plagiarism</button> <button>Paraphrase</button> ☐ Show Bullets   
Summarize		

Content Production by AI:

3

Automated Story Creation

- AI **creating articles** based on data.
- Some contributors saw potential for this to be **extended to video stories in future**.



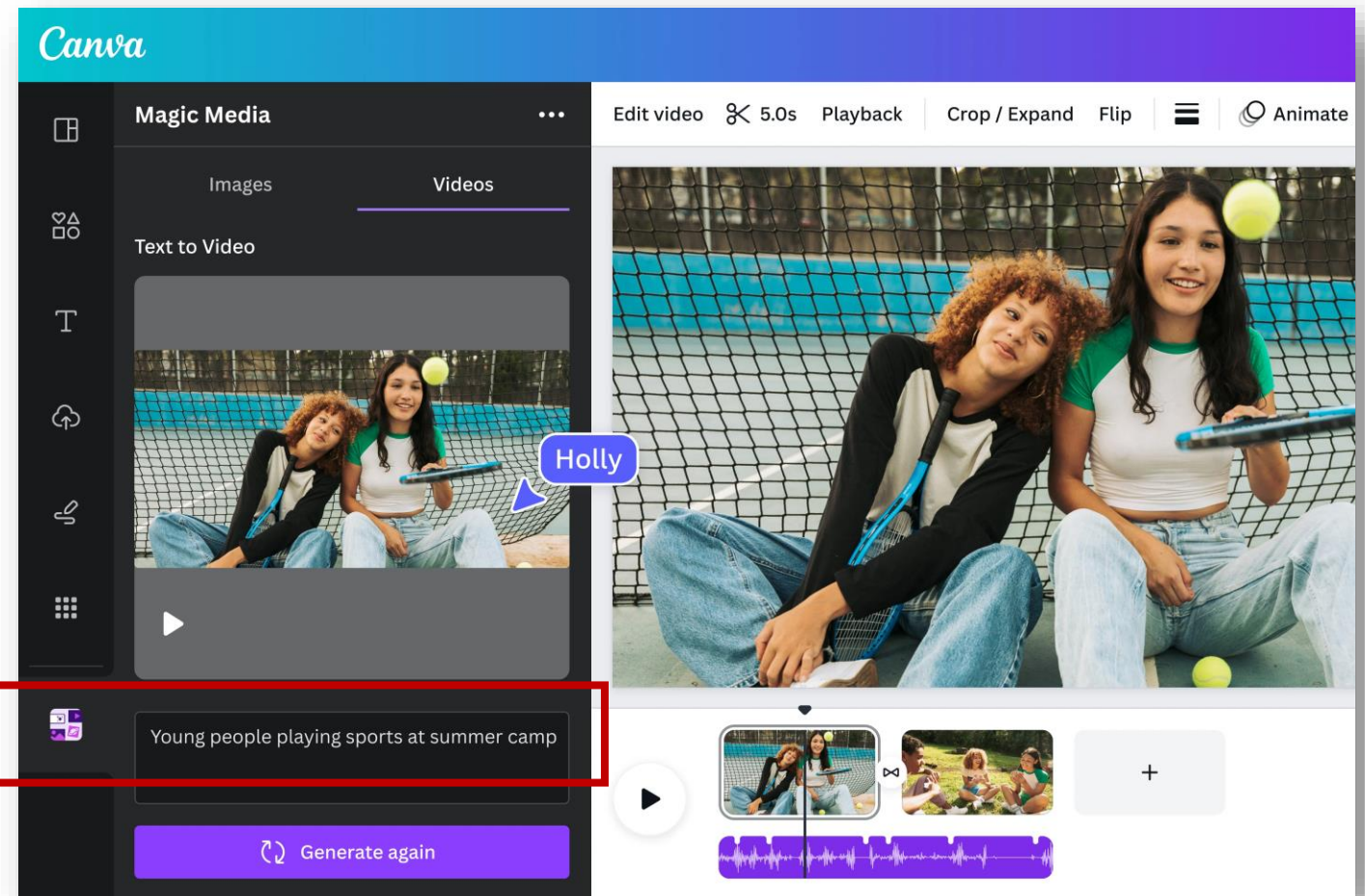
Content Production by AI:

4

Idea Visualization

- Turning a concept into **something visual**.

Young people playing sports at summer camp



Content Production by AI:

5

Live Production

- Robotic cameras
- Using **face detection** to automatically frame shots.
- **Select the best shot** for the director.

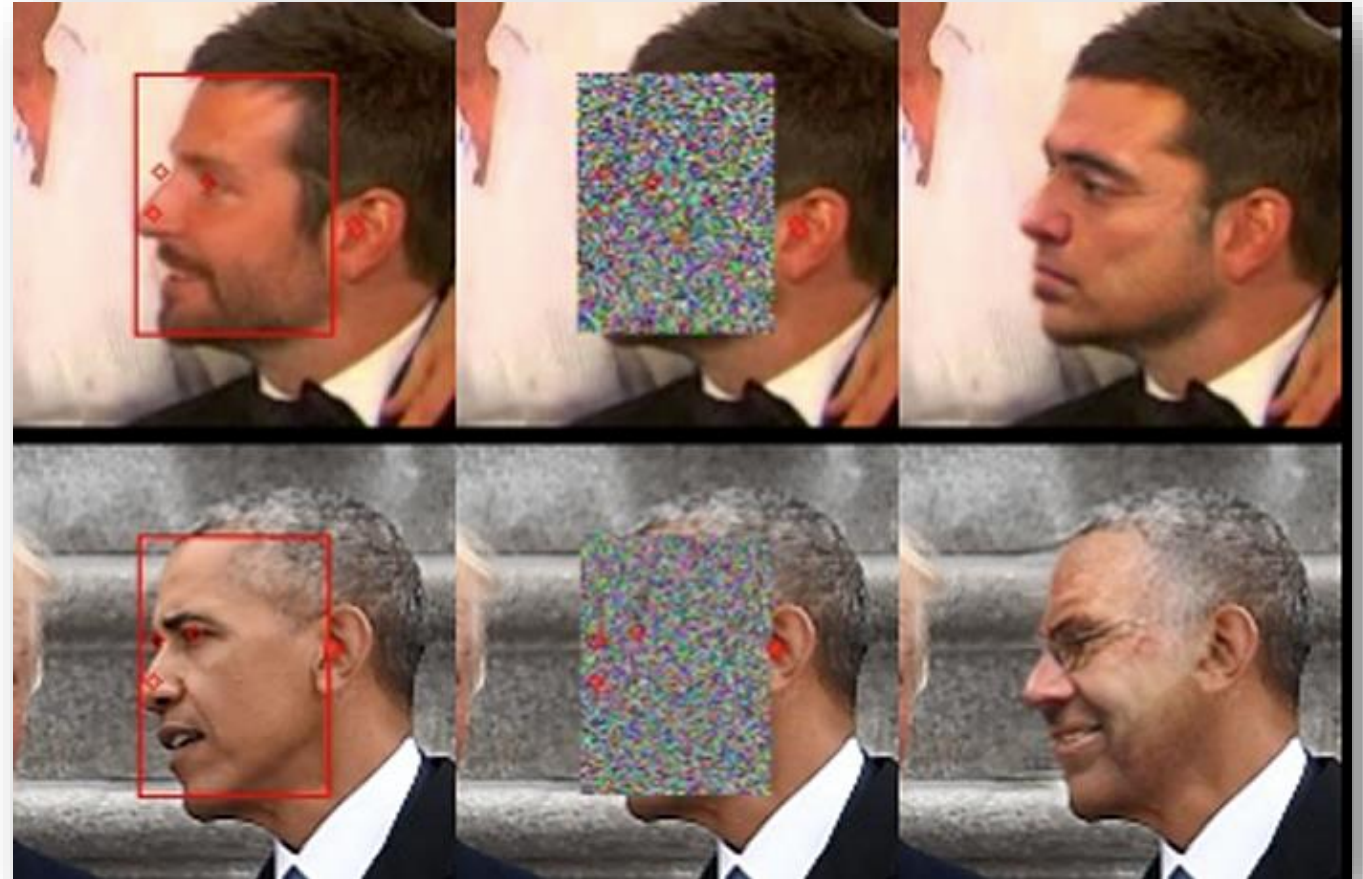


Content Production by AI:

6

Contributor Anonymity

- Where an on-screen **individual's identity** must be **protected**.
- Used **deep fake technology** to give contributors real-looking but **fake faces**.



Content Production by AI:

7

Visual Effects Anonymity

- Used **tools to animate** still images for use.

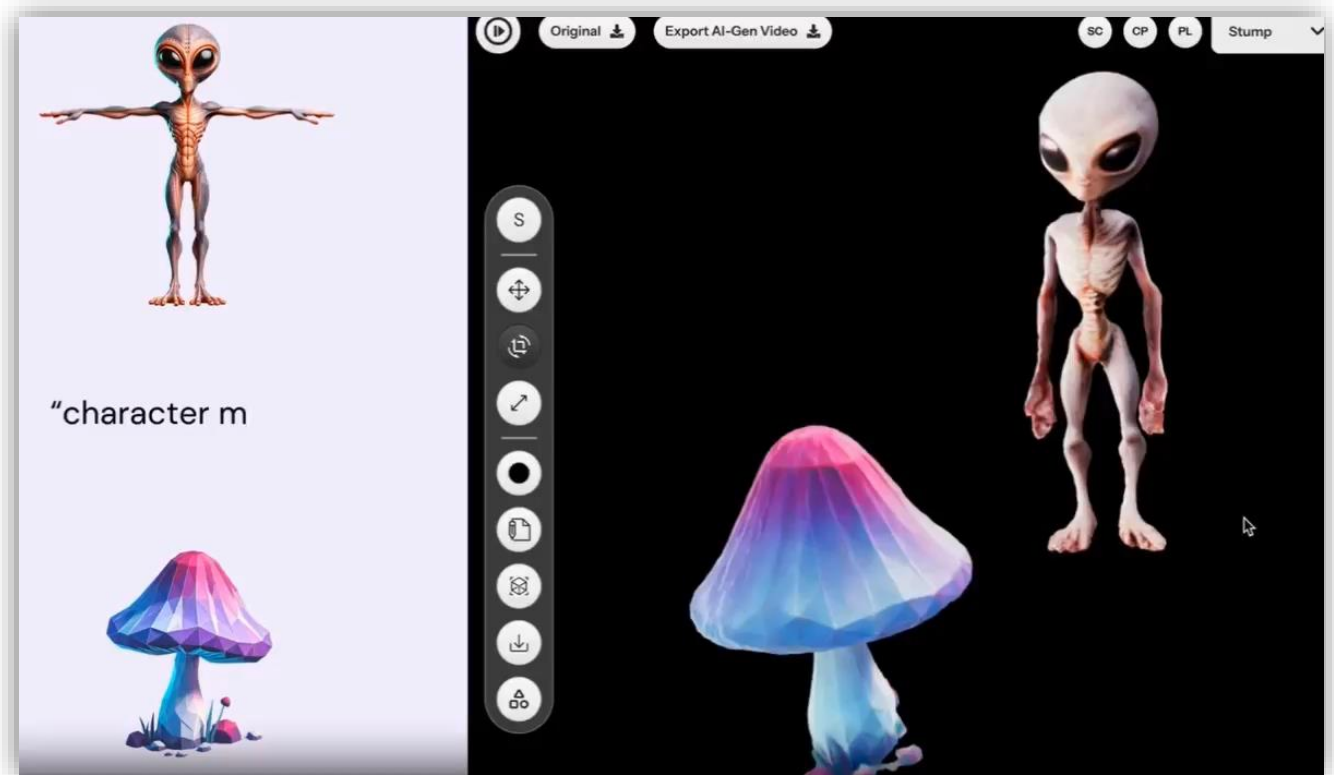


Content Production by AI:

8

Virtual Worlds

- Use **generative AI** to create 3D worlds for their games.
- It is only a matter of **time** before similar tools are used **for virtual production**.



Content Production by AI:

9

Highlight Selection

- By identifying the **'best' shots**
- The best still **frame** to **represent a clip**



Scene
change
detection



Human
detection
& tracking



Full tennis
match (hours
long)

Highlights of the
match (minutes
long)



Content Production by AI:

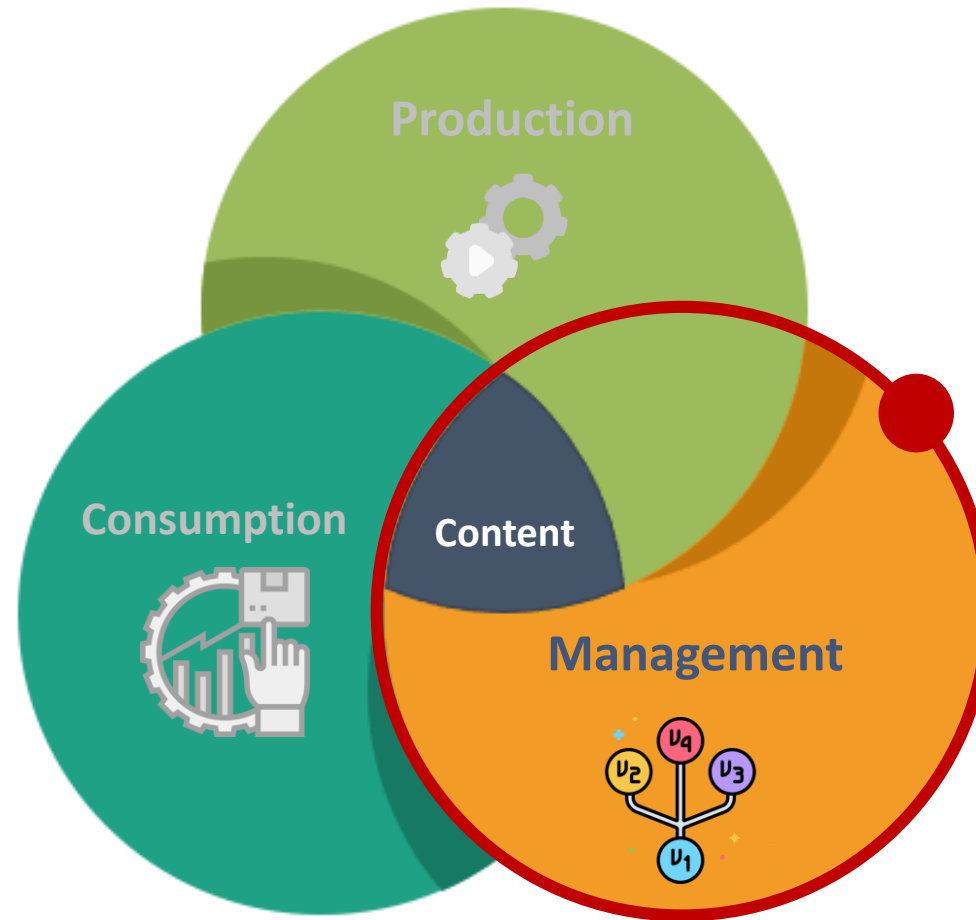
10

Generative Content Editing

- Enabling the user to edit or **expand images**
- Add and **remove elements**
- Removing **a boom in shot** to expanding the width of a portrait image.



Content Management by AI:



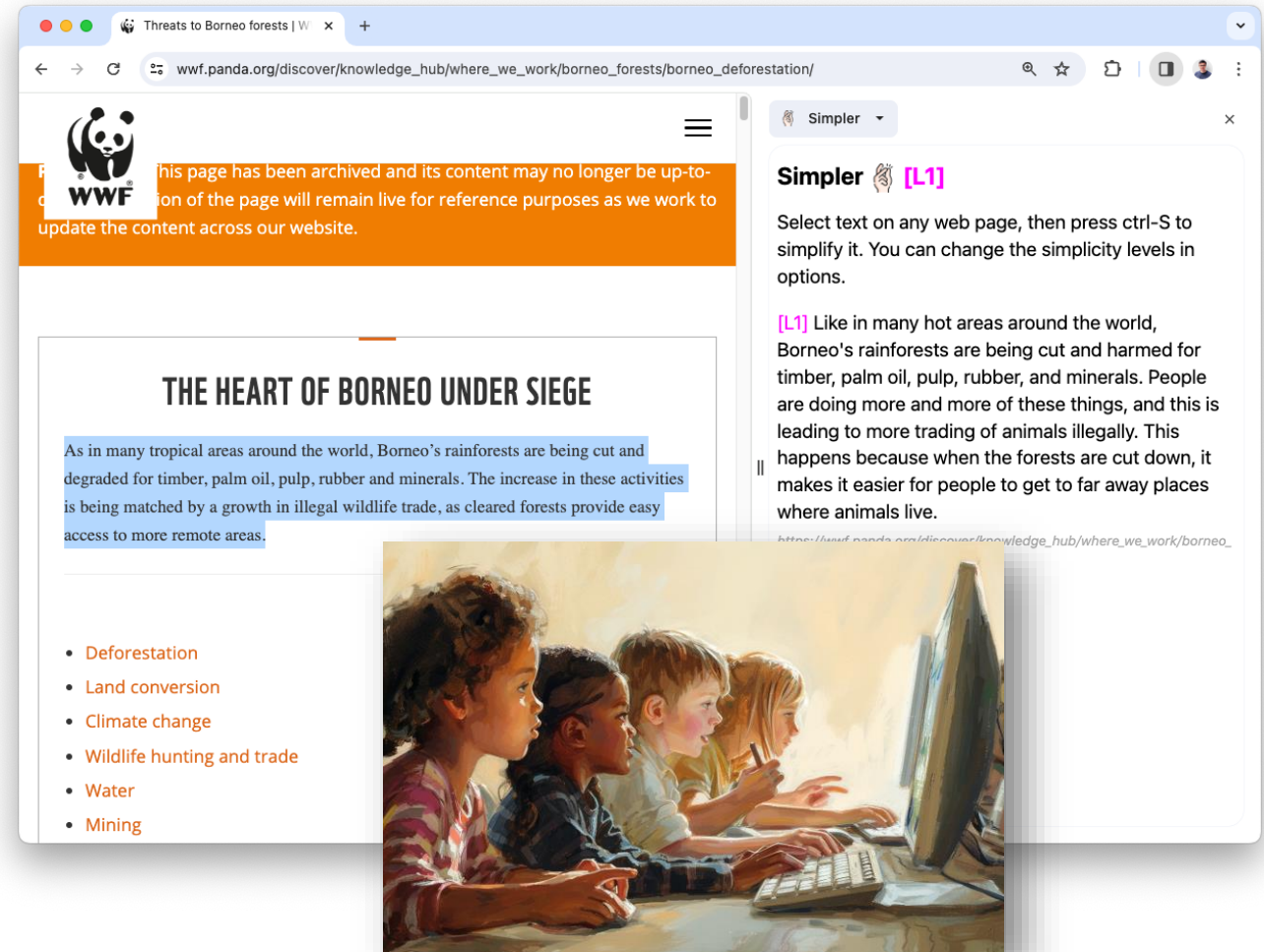
**From technical parameters to
standards of taste**

Content Management by AI:

1

Text Content Versioning

- LLMs are effective at **manipulating text content**
- For example **creating versions** of news stories aimed at **children**



Content Management by AI:

2

Voice Cloning

- It is more widely used to **create localized versions**.
- **Translated audio** can be voiced in the tones of the **original actor**.



Content Management by AI:

3

Synthetic Dubbing

- Involves using AI to **generate vocals from text**

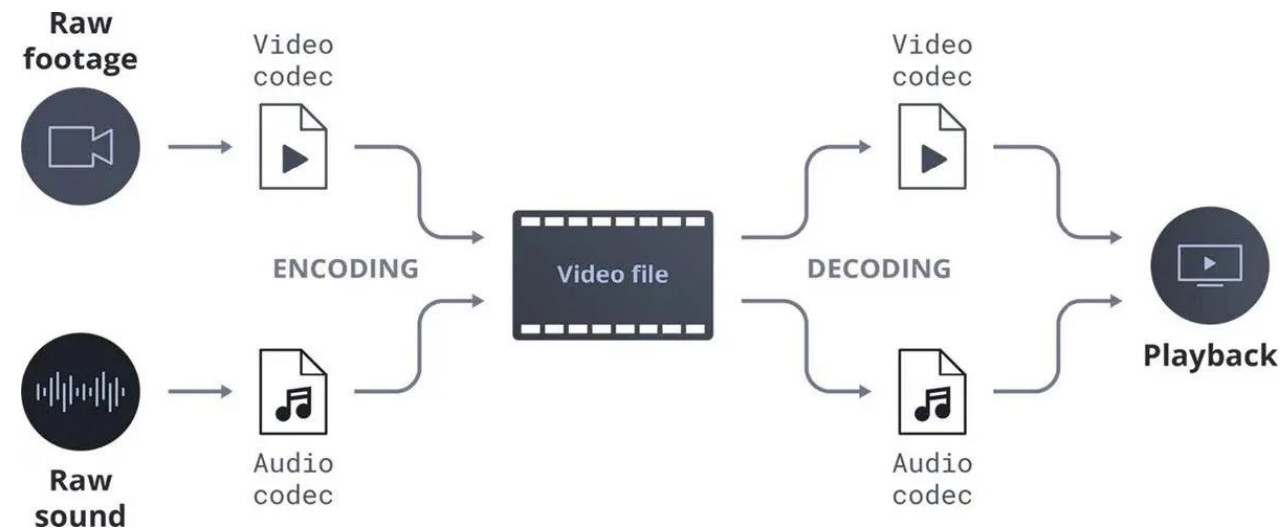


Content Management by AI:

4

Video Compression

- AI has been deployed in many video encoding tools, **optimizing codec parameters based on the content** being encoded.
- The use of **scene and shot detection** **allows each shot** in a video **to be encoded in the most appropriate way**, delivering the best possible picture to the viewer **within the available bandwidth**.



Content Management by AI:

5

Content Enhancement

- Playback devices such as TVs and tablets often include capabilities to **upscale content**, **enhance speech audio**, and other related functions.

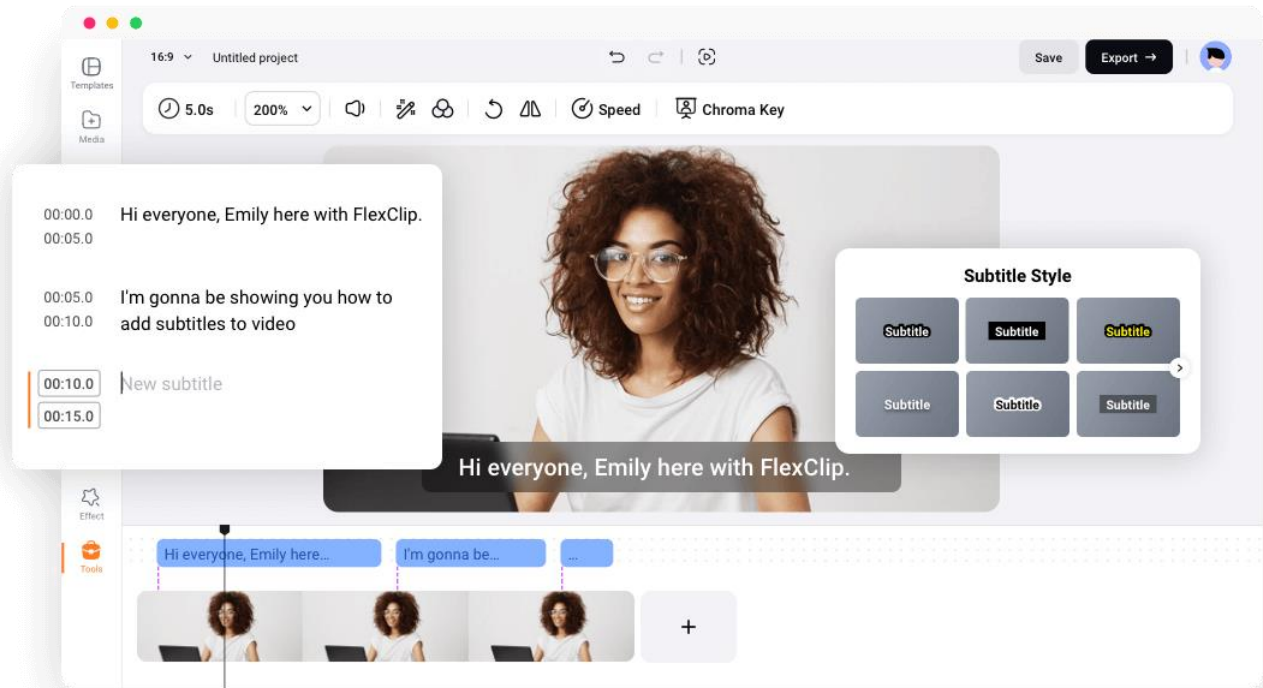


Content Management by AI:

6

Subtitle Alignment

- As with audio, subtitles and closed captions **must align correctly to the video**, and AI can be used to **validate this**.



Content Management by AI:

7

Texted Element Detection

- Identifying **video elements** which have text, whether **on-screen graphics** or organic text such as **signs**.

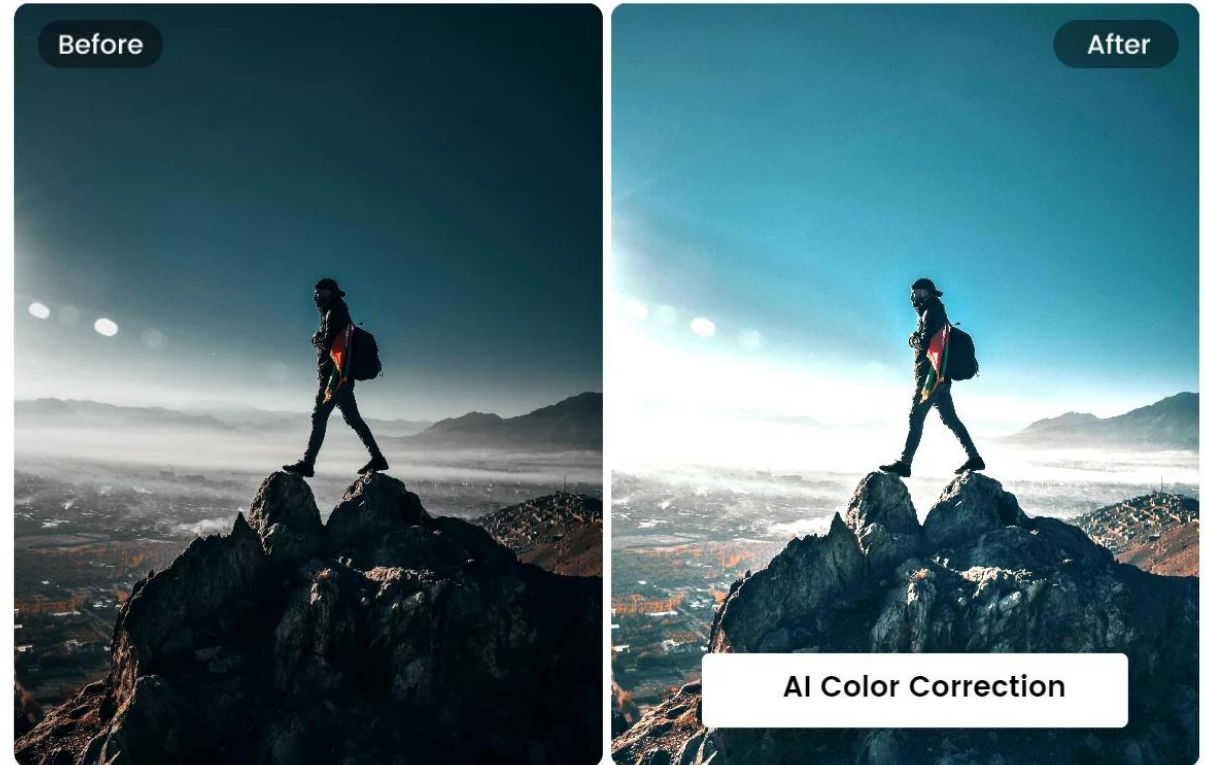


Content Management by AI:

8

Color Grading

- To **assist editors** on shows that do not have budget for a full **color grade**

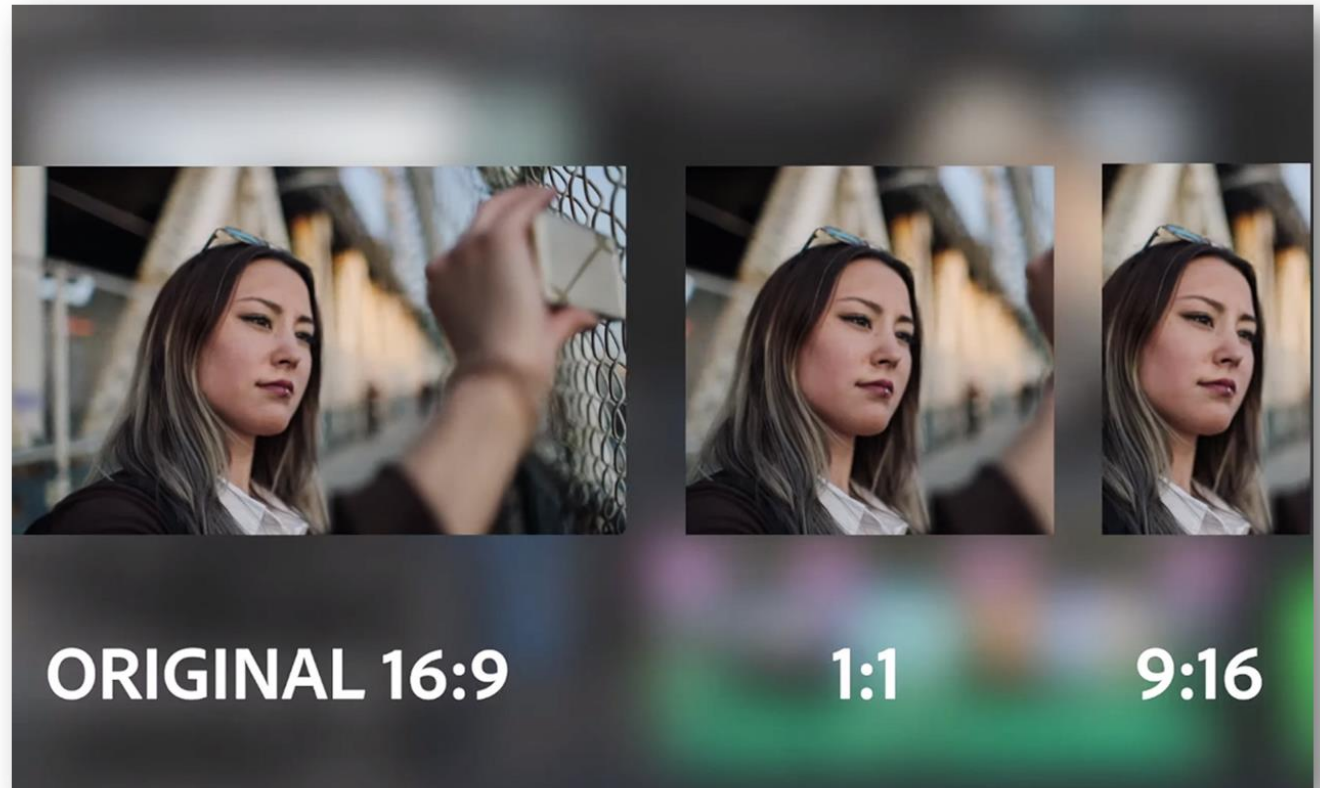


Content Management by AI:

9

Video Verticalization

- **Automatically reformat content to different aspect ratios**
- It can be achieved by cropping and reframing content



Content Management by AI:

10

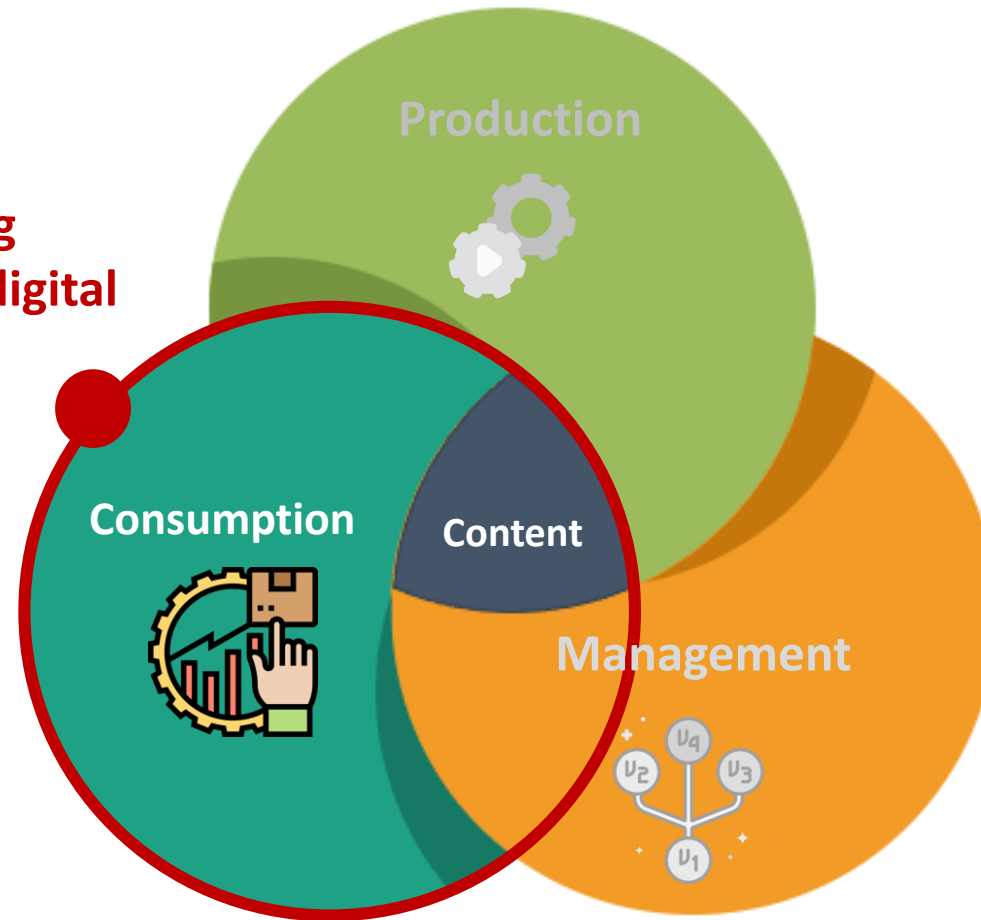
Dub Lip Syncing

- Whether human created or synthetically generated
- **Generative AI** now also allows **lip movements** to be altered to **match the dubbed audio**



AI in Content Consumption:

Huge range of streaming services, broadcasters, and digital video platforms.



AI in Content Consumption:

1

Filling Advertising Breaks

- For **linear broadcast channels**, adverts make up part of the **pre-planned schedule**.
- Therefore, AI can be used in the scheduling process **to suggest relevant adverts...**



AI in Content Consumption:

2

Video & Copyright Analysis

- Video and audio can be analyzed by AI to **identify required rights** and **copyright clearances**.
- Tools like **face recognition** can play a part in this



AI in Content Consumption:

3

Trailer Creation

- Programed **trailers** and **teaser** videos are increasingly important, and are often used in **streaming apps** to entice viewers.



AI in Content Consumption:

4

Advertising Sales

- **Media companies'** sales teams are being assisted by AI,
- Such as lead prioritization using **market data and historic sales information.**



AI in Content Consumption:

5

Advertising Insertion & Replacement

- For example, **replacing advertising boarding around the edge** of a sports field with local or personal alternatives.



AI in Content Consumption:

6

Content Recommendations

- **Recommendations** have been a key part of **streaming apps** since their earliest days.

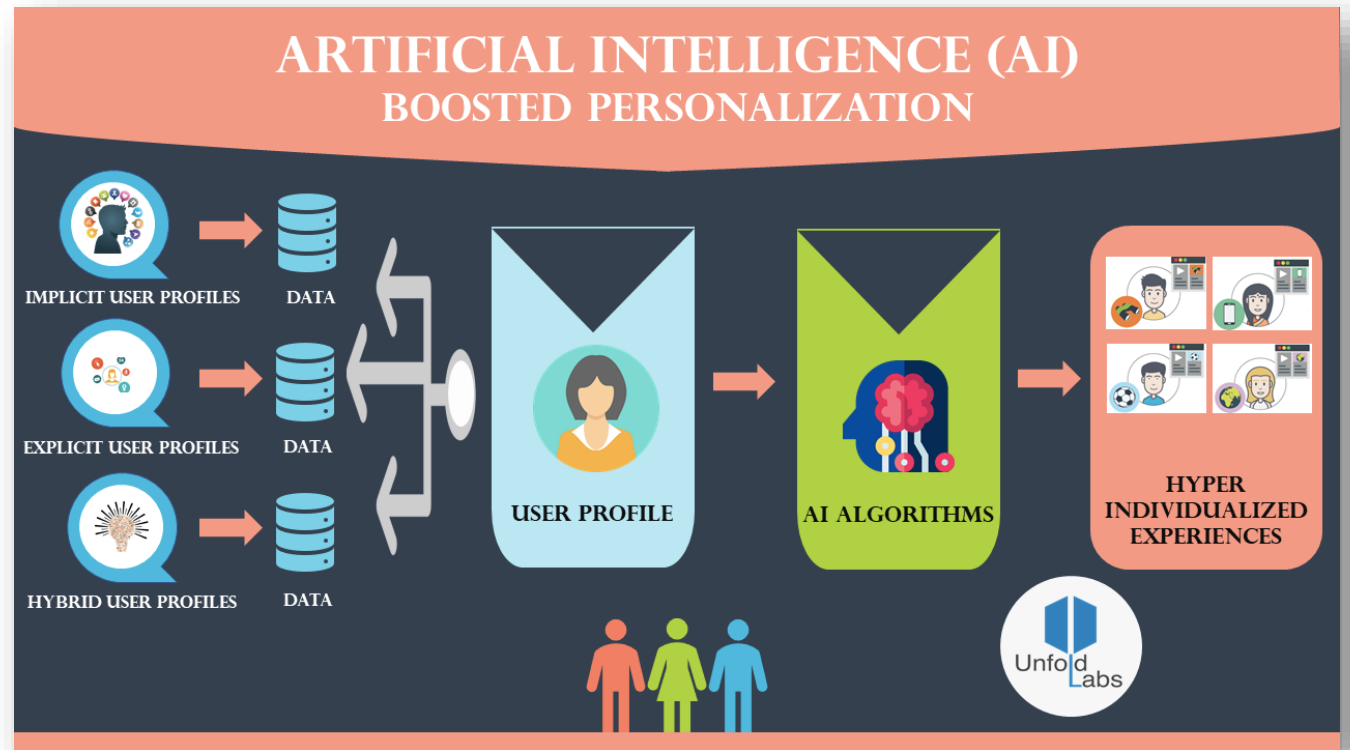


AI in Content Consumption:

7

Personalization & Dynamic Versioning

- A program could be offered with **different graphics** or **languages**, additional on-screen data and information, or in **different aspect ratios** or durations **based on the**
 - ✓ **user's device**
 - ✓ **user's Location**
 - ✓ **user's preferences**

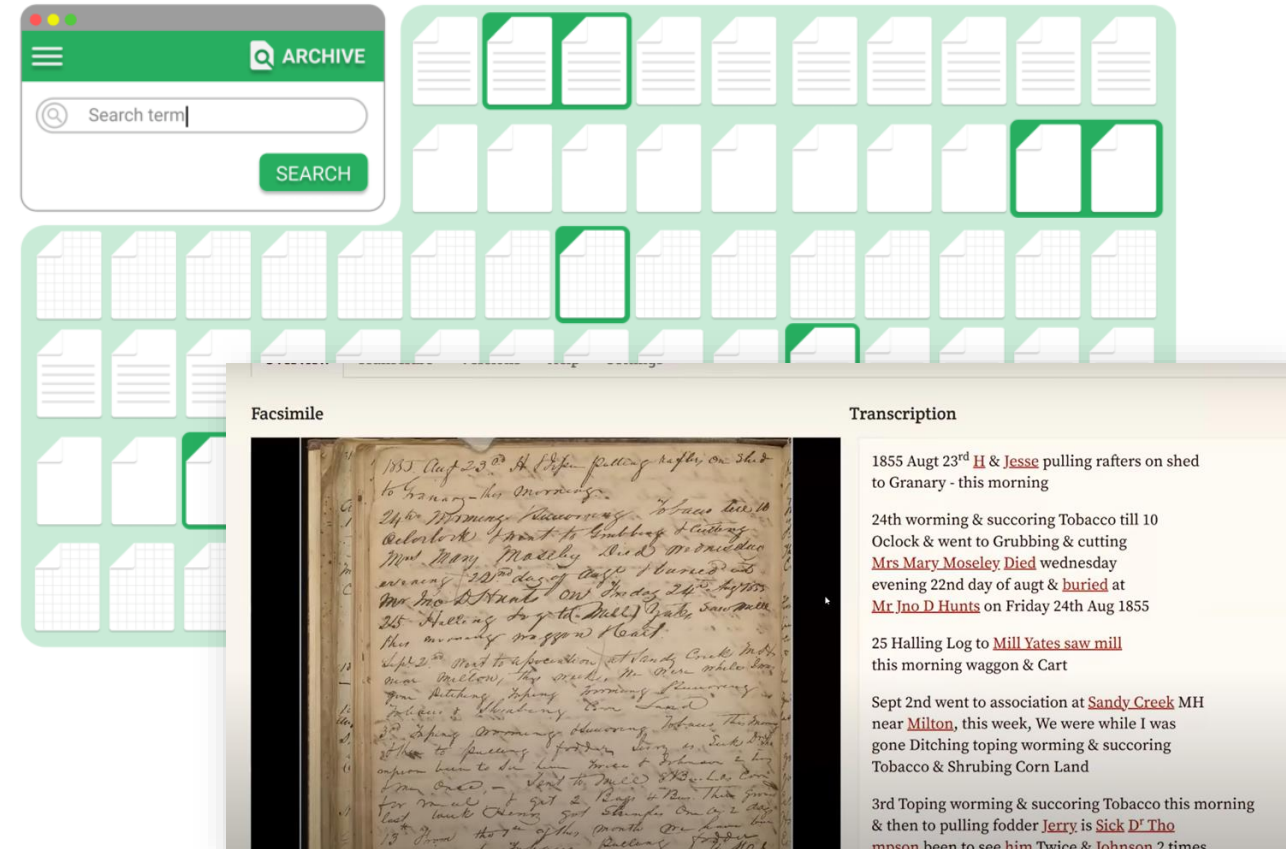


AI in Content Consumption:

8

Identifying Content with Potential Archive

- Content is kept if it might have future value, either for internal reuse or as commercially licensed content.

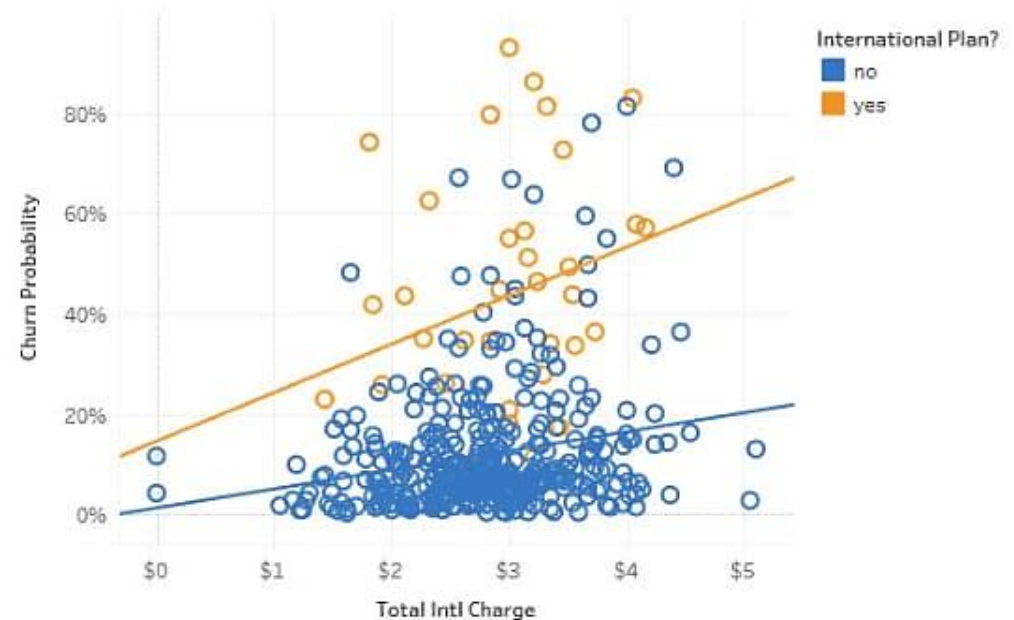
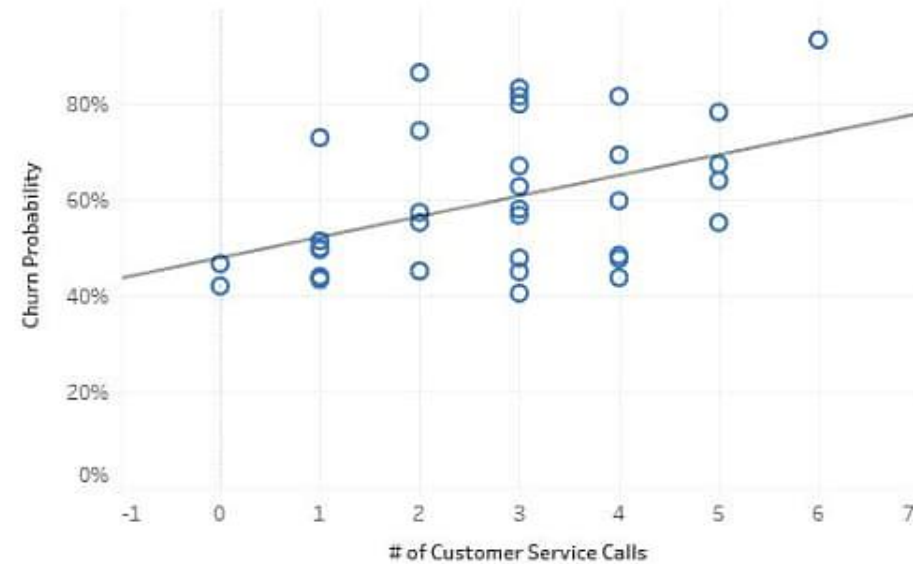


AI in Content Consumption:

9

Churn Prediction

- Some streaming services already **monitor user behavior** to predict 'churn'



AI in Content Consumption:

10

Diversity & Inclusion Analysis

- Multiple survey responses proposed AI to **monitor diversity**, equity, and inclusion targets such as **on-screen race** and **gender representation**.



The status of AI is changing rapidly

- **New application** are emerging
- **New programming** is appearing rapidly
- **New AI LLM** are appearing
- **New Chipsets** are begin built – not just by Nvidia – but by other companies as well
- Huge **new investments going to AI development**, AI applications and AI R&D
- **More countries** and Governments are **jumping onto the AI bandwagon**

We should learn to live with AI **as an assistant not as a competitor.**

