weaverize

Weaverize Technologies

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Weaverize Presentation

Company specialization

Specialized in video analysis and processing and artificial intelligence, integrated into Web, Cloud (SaaS), Mobile, Embedded, or Traditional applications.

Comprehensive support

Complete project support - from ideation to the realization of a marketable product, and even beyond.

Innovative and recognized

Recognized by the French Ministry of Higher Education, Research and Innovation as an organization conducting research, development, and innovation on behalf of its clients for the years 2019 to 2021.

Awards and distinctions

CONCOURS DOCTEURS ENTREPRENEURS
Quand les docteurs créent de la valeur

FONDATION Denise & Norbert Ségard
INNOVER POUR AGIR

CES 2018

CRÉDIT IMPÔT RECHERCHE AGRÉMENT CIR 2019-2020-2021

CRÉDIT IMPÔT INNOVATION AGRÉMENT CII 2019-2020-2021

Team & Locations

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8 **team members**

including researchers, developers, a Scrum Master, a UX/UI designer, and more.

Office located in Lille

Headquarters in Tourcoing

Servers in Roubaix

Weaverize expertise areas

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- Multimedia Analysis & Processing
- Artificial Intelligence
- Application Development
- High-Performance Computing
- Cloud Computing
- Embedded Systems

Clients & Partners

Already chosen by clients who dare to innovate with us - pushing technology's limits to create unique experiences.

WEAVERIZE TECHNOLOGIES

The technology components presented are 100% deployable on-premises.

TRL (Technology Readiness Level)

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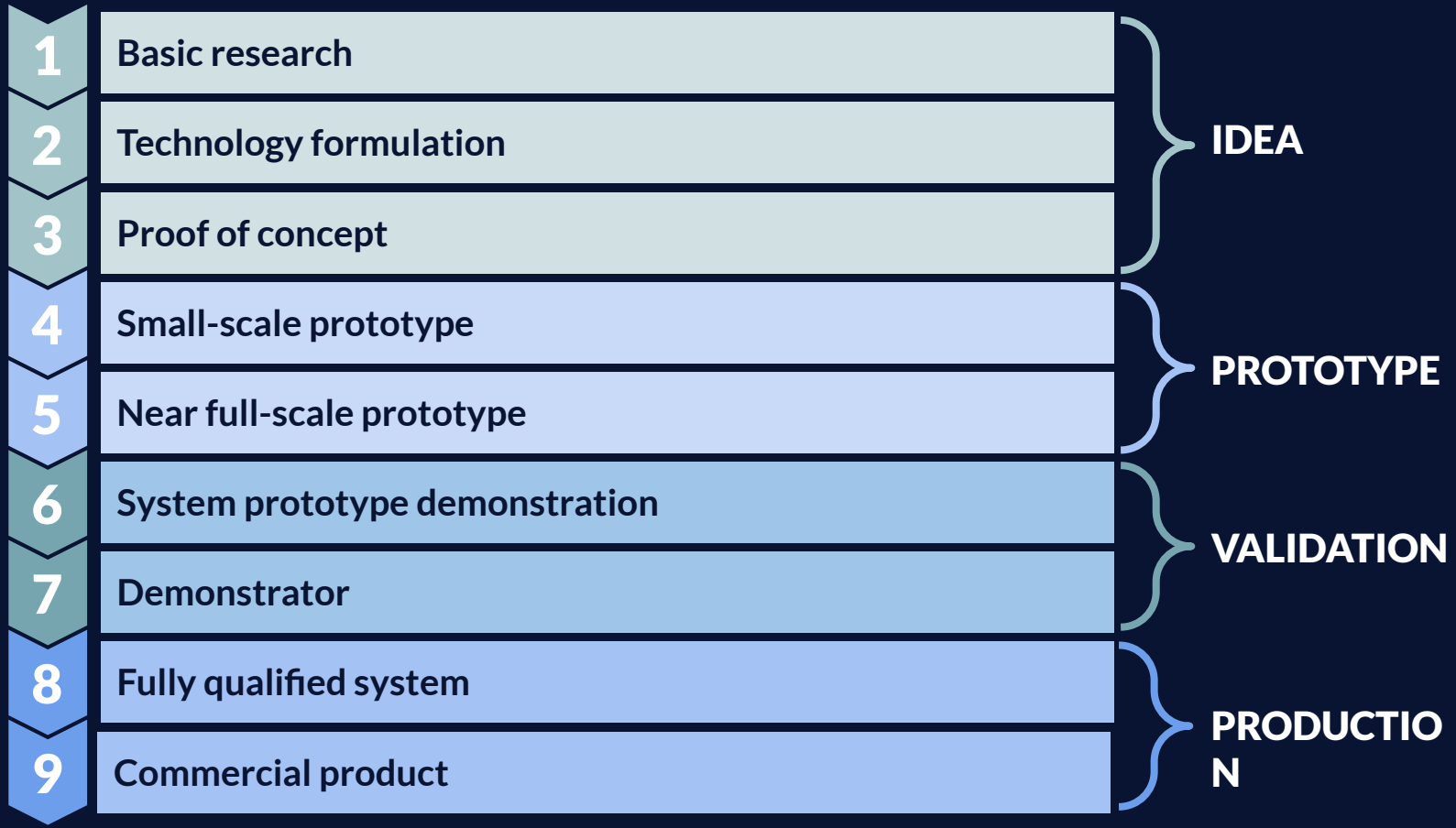

Large Language Model

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TRL 6

Text Processing

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Input Text

The image captures a group of men playing rugby on a field. There are several players in the scene, with some of them in the middle of a play, while others are standing around the field. One player is holding a rugby ball, and it appears that they are either preparing to pass the ball or have just made a play.

The players are spread out across the field, with some closer to the foreground and others further in the background. The rugby ball is located in the center of the scene, with the players surrounding it. The players are wearing uniforms, indicating that they are part of a team. Overall, the image showcases an exciting moment during a rugby match.

Translation

L'image met en scène un groupe d'hommes qui jouent au rugby sur un terrain. Il y a plusieurs joueurs dans la scène, avec certains de ceux-ci en pleine action, tandis que d'autres sont dispersés autour du terrain. Un joueur est tenant un ballon de rugby et il semble qu'ils préparent à passer le ballon ou ont fait une action récente.

Les joueurs sont éparpillés tout au long du terrain, avec quelques-uns plus proches de la partie avant et d'autres plus loin vers l'arrière. Le ballon de rugby se trouve au centre de la scène, entouré par les joueurs. Les joueurs portent des uniformes indiquant qu'ils font partie d'une équipe. En général, l'image montre un moment passionnant lors d'un match de rugby.

Summary

A group of men are seen playing rugby on a field, surrounded by other players in different positions.

TRL 4

Natural Language Search

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User Query

“A photo of Macron hugging Zelensky in France”

LLM

LLM

Conversion into a Specific Query

("person:Emmanuel Macron", "person:Volodymyr Zelensky", "location:France") AND (act:hugging)

Conversion into a JSON Query

```
{
  "query": {
    "bool": {
      "should": [
        {"match_phrase": {"caption": "Macron hugging Zelensky"}},
        {"match_phrase": {"location": "France"}}
      ],
      "filter": {
        {"tag": {"field": "_tags", "values": ["person:Emmanuel Macron"], "operator": "terms"},
         "tag": {"field": "_tags", "values": ["person:Volodymyr Zelensky"], "operator": "terms"}}
      }
    },
    "sort": [{"date_taken": A"descending"}],
    "size": 1,
    "fields": ["id", "caption"]
  }
}
```

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Image descriptions

TRL 6

01 Automatic Image Description

Input image

Example 1

Output description :

The image captures a group of men playing rugby on a field. There are a total of nine players, with some of them in the middle of the field, while others are positioned closer to the edges. The players are actively engaged in the game, with one of them attempting to catch the sports ball, which is located near the center of the field.

The players are wearing various uniforms, indicating that they are part of different teams. Some players are closer to the foreground, while others are further back, creating a sense of depth in the scene. The players are spread out across the field, with some players closer to the left side, others in the middle, and a few more on the right side.

Output keywords :

Rugby, Players, Ball, Tackle, Scrum, Game, Field, Team, Competition, Sports, Action, Athletes, Fitness, Physical, Exercise, right side.

TRL 6

01 Automatic Image Description

Input image

Example 2

Output description :

The image captures a group of men playing rugby on a field. There are several players in the scene, with some of them in the middle of a play, while others are standing around the field. One player is holding a rugby ball, and it appears that they are either preparing to pass the ball or have just made a play.

The players are spread out across the field, with some closer to the foreground and others further in the background. The rugby ball is located in the center of the scene, with the players surrounding it. The players are wearing uniforms, indicating that they are part of a team. Overall, the image showcases an exciting moment during a rugby match.

Output keywords :

Rugby, Players, Tackle, Scrum, Ball, Game, Team, Competition, Sports, Athletes, Action, Fans, Stadium, Crowd, Spectators

TRL 6

01 Automatic Image Description

Input image

Example 3

Output description :

The image captures a rugby game in progress, with two men in the center of the action. One man is holding a rugby ball, while the other is attempting to tackle him. They are both in a tussle, trying to gain control of the ball.

In the background, there are several other players on the field, some of them running or preparing for the next play. The scene is filled with energy and excitement as the players engage in the game.

Output keywords :

Rugby, Players, Tackle, Fall, Ground, Ball, Sports, Game, Competition, Team, Athletes, Action, Physical, Contact

TRL 6

01 Automatic Image Description

Input image

Example 4

Output description :

The image features a group of three young people, two men and a woman, standing together and posing for a picture. They are all smiling and appear to be enjoying themselves. The woman is positioned on the left side of the group, while the two men are on the right side.

In the background, there are several other people scattered around, possibly attending the same event or gathering. Some of them are standing closer to the foreground, while others are further in the background. The atmosphere seems lively and social, with everyone engaged in the event.

Output keywords :

Fans, friends, smiling, posing, happy, excited, rock concert, stadium, crowd, cheering, sports event, music, celebration, camaraderie, youthful, joyful.

02 Speech-to-Text Transcription

Voice is transcribed live into a text file, usable for real-time subtitles, for instance.

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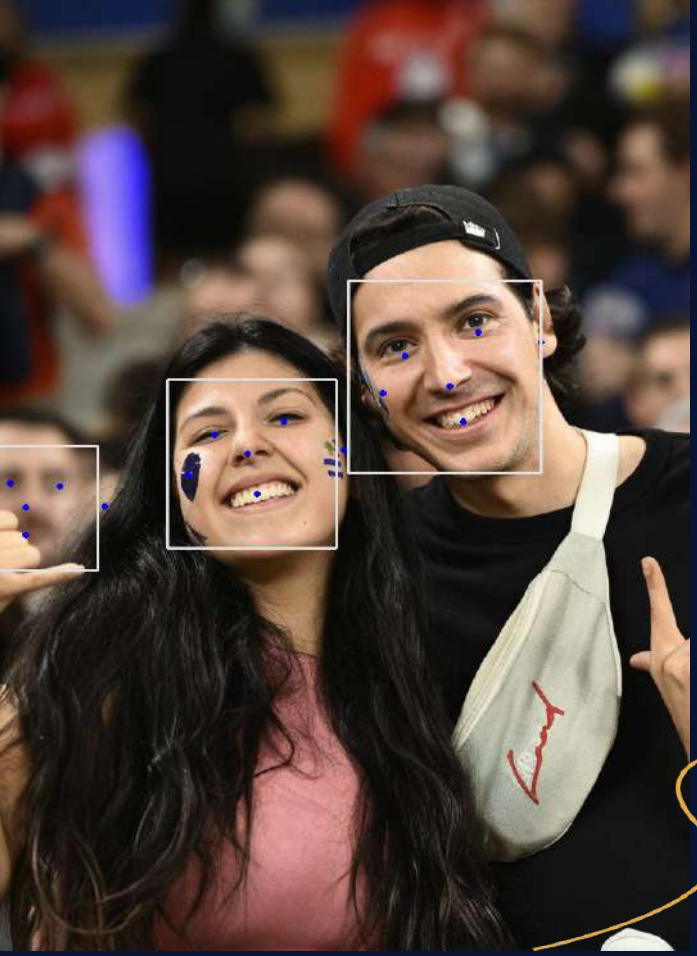
TRL 7

02 Speech-to-Text Transcription

Le 11 de la Nouvelle-Zélande et le 15 de l'Uruguay.

TRL 7



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03 Face and eye position detection

Automatically detects faces in images/video and precisely locates the eyes (centers + landmarks), including in multi-person scenes.

TRL 9

04 Face Matching

Associates each face with a digital embedding, queries a vector database, and returns the Top-k closest results to identify the person with a confidence score.

This technology is successfully implemented in ITAC.

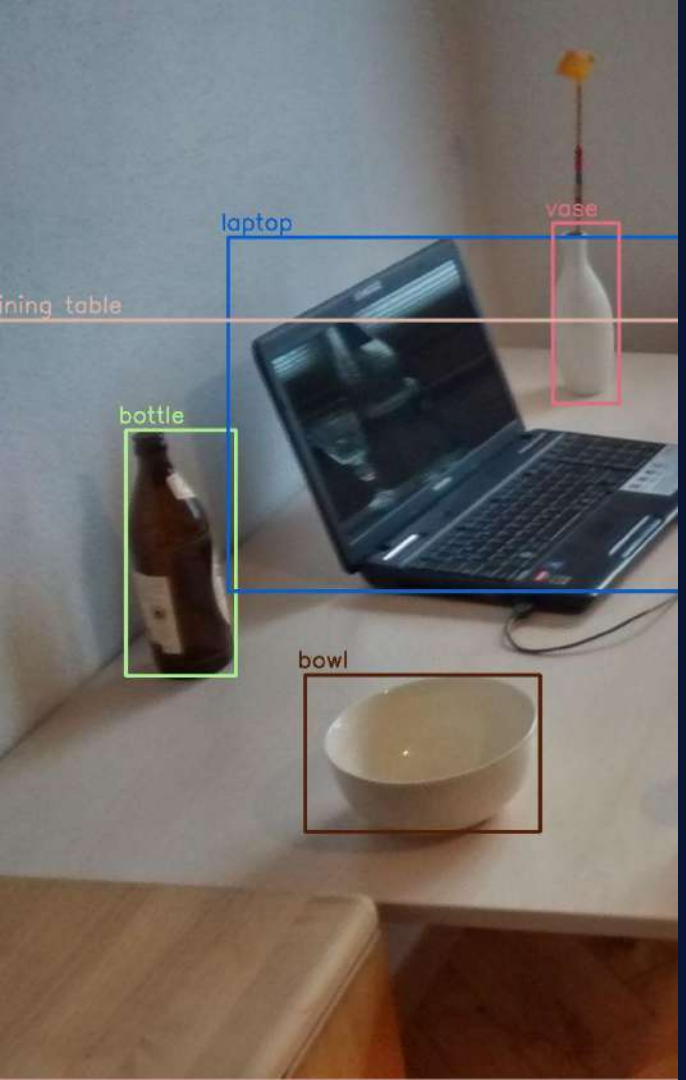
TRL 9

05 Image Cropping

Smart cropping automatically suggests a crop for an image based on the selected profile.

- Editable crop suggestion
- Ability to define crop types

TRL 4



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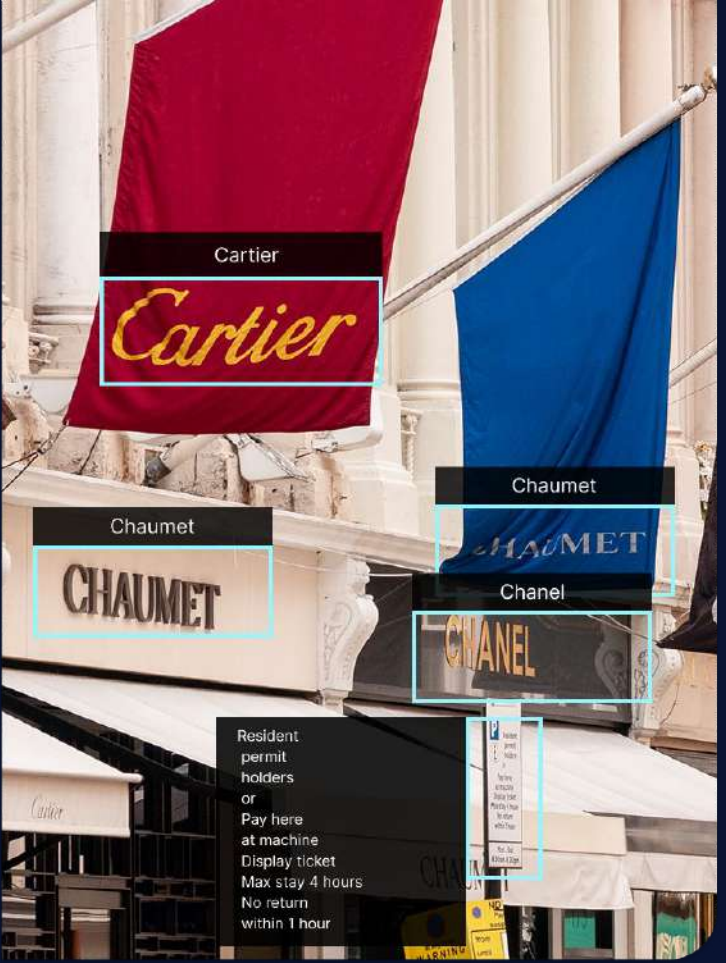
06 Object Detection

This algorithm detects objects (or logos) in images or video, and runs in real time on Full-HD video.

- [x] Can be trained to recognize **logos** and **branded objects**.

TRL 9



07 OCR (Optical Character Recognition)

OCR can automatically extract text found in an image or throughout a video.

TRL 5

08 Image Saliency Mapping

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Saliency helps estimate where the eye is drawn in an image.

Image embedded in a news feed

Image Saliency

Saliency score: **0.56**

TRL 4

09 Dominant Color Calculation

(Mean, Most Frequent)

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Calculs

Most frequent color : (0, 0, 42)

Average color: (72, 84, 41)

LLM

Main colors:

The most recurring colors in this image are blue and black.

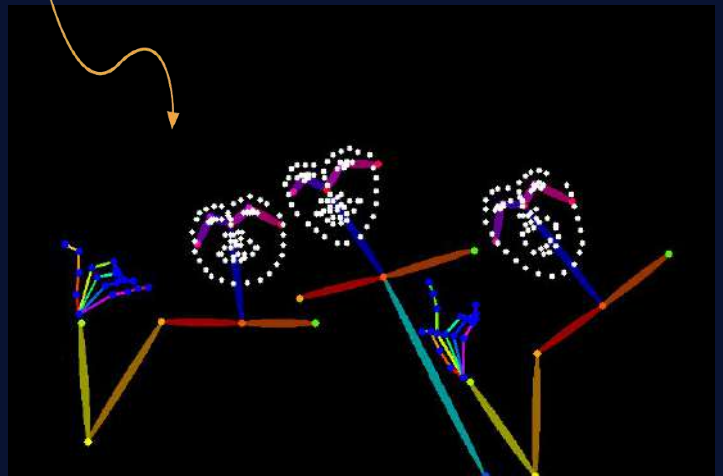
Background color:

The color of the background is green.

TRL 4

Input image

Estimation after background removal



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10 Pose Estimation

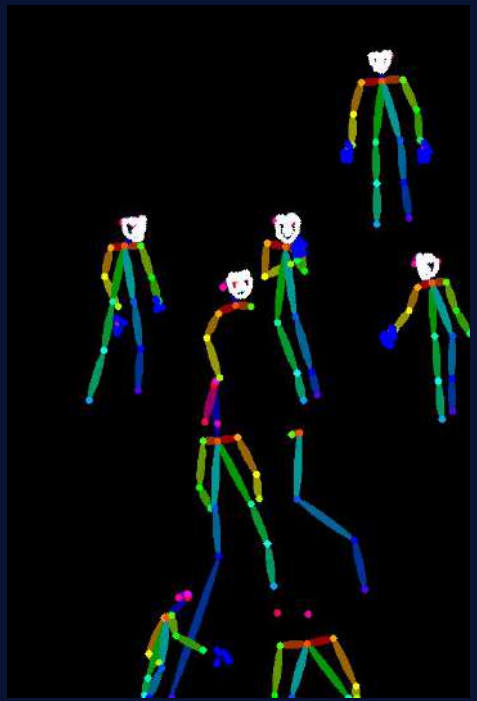
Gesture/activity recognition, auto-framing, engagement statistics, AR.

TRL 3

10 Pose Estimation

Example 2

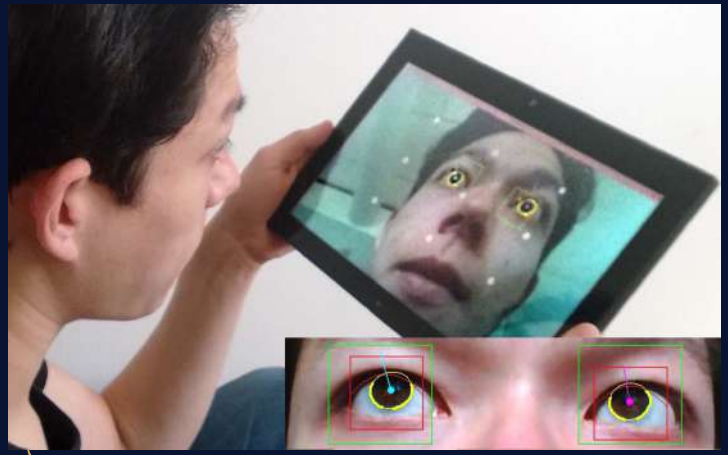
Input image



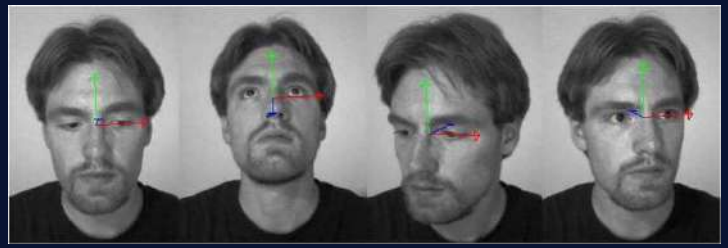
Estimation after background removal

TRL 3

Gaze estimation



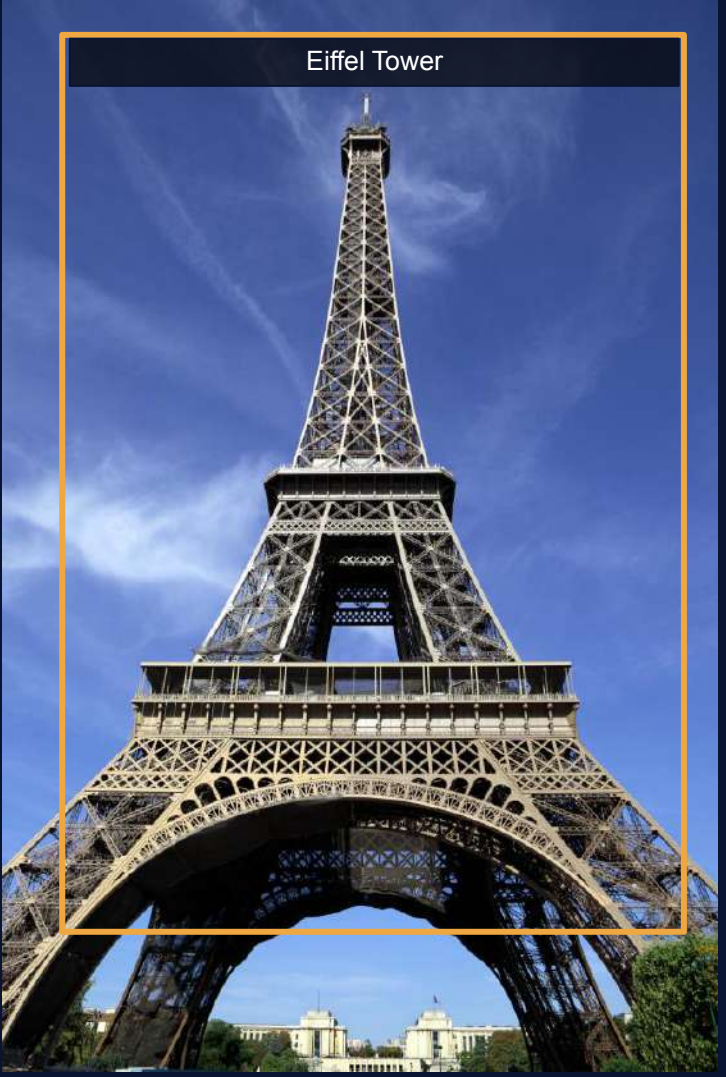
Face-pose estimation



11 Gaze and face pose estimation

Gaze estimation and face-pose estimation infer what a person is looking at from a photo or a video of their face — enabling estimation of the viewed object or person.

TRL 1



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12 Landmark Recognition

Google Landmark Competition :

- **Dataset of 200k landmarks and 5M+ photos**
- **Ability to train a new model**
- **Ability to adapt existing models**

TRL 1

Segmentation / Cut-out

Input image

Depth map

13 Depth Estimation

From a single image or video, the module produces a per-pixel depth map. This can be used to blur the background, segment planes, improve framing/auto-focus, or prepare compositing/AR.

TRL 6

13 Depth Estimation

Example 1

Input image

Depth map

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TRL 6

13 Depth Estimation

Example 2

Input image

Depth map

TRL 6

13 Depth Estimation

Example 3

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Input image

Depth map

TRL 6

13 Depth Estimation

Example 4

Input image

Depth map

TRL 6

14 Depth-Based Cut-out

The depth map separates image planes to:

- Improve semantic analysis
- Perform plane-based cut-out

TRL 6

Input image

Person

Cut-out image

15 Semantic Segmentation / Cut-out

Semantic segmentation enables cutting out an image from an instruction.

- **Several cut-out proposals**
- **Fully automated process**
- **Ability to export both the mask and the cut-out image**
- **Instance-level separation for each occurrence**

TRL 5

TRL 5

15 Semantic Segmentation / Cut-out

Example 2

Input image

Person

Cut-out image

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Video Editing

Input video

Cuts based on transcript

Rearrange segments

Edited video

16 Video Editing by Transcription

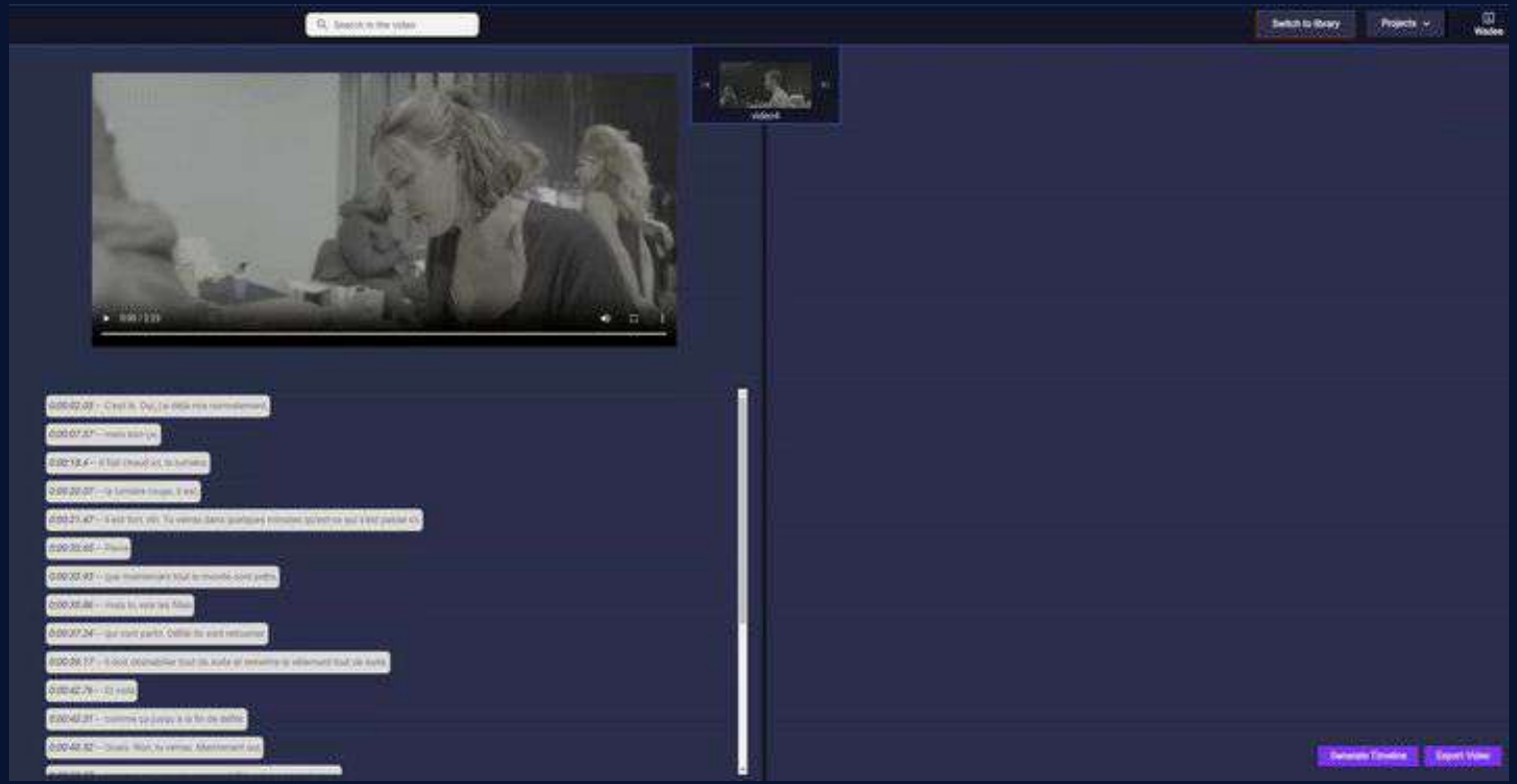
Designed for documentary creation: select segments of an interview transcript and automatically build the video from those selections.

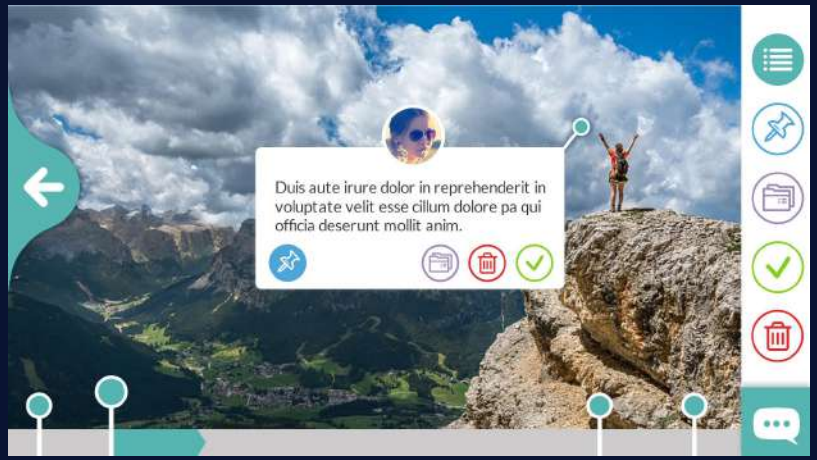
TRL 8

TRL 7

16 Video editing by transcription (demo)

Link





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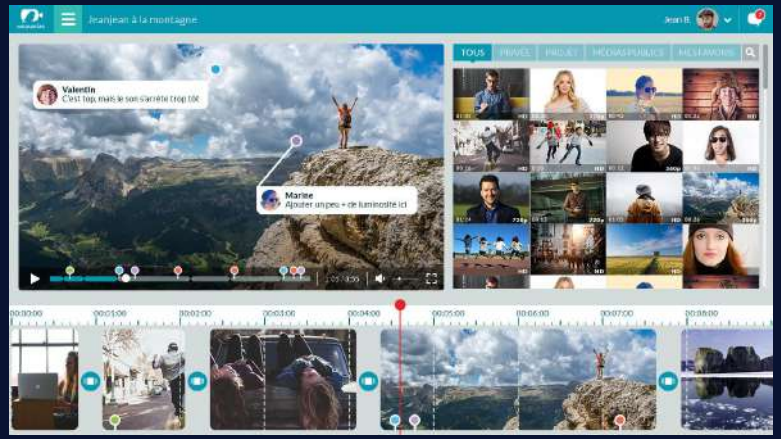
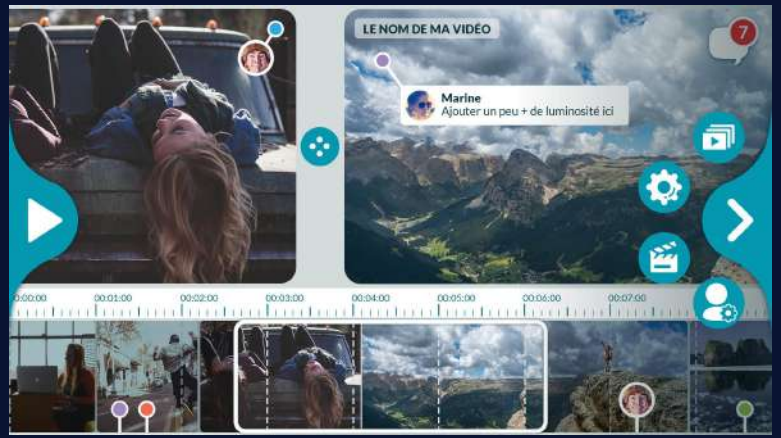
17 Feedbacks

An app to leave precise, time- and space-anchored feedback on a video.

Desktop and mobile apps let teams leave clear comments managed like a to-do list.

TRL 9





18 Weaverize Studio

An easy, collaborative online video editor.

Edit simultaneously with others on desktop or mobile.

TRL 9

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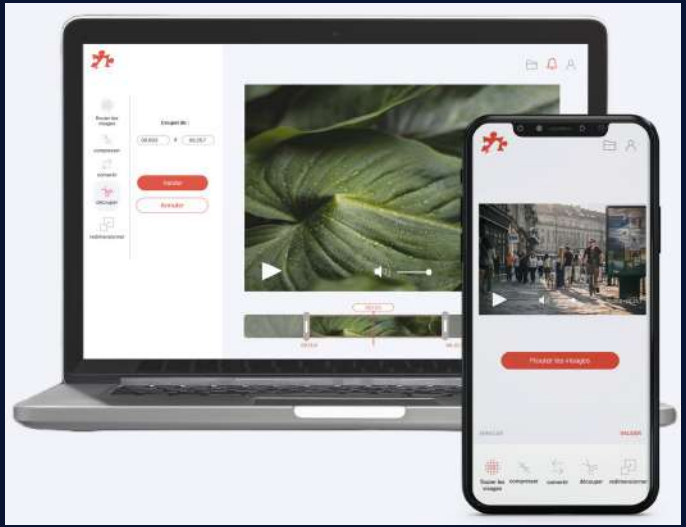

19 API Montage Vidéo

The Video Editing APIs are a collection of small tools that allow you to analyze and transform various types of media.

They enable mass processing of large media collections or single-file processing through a simple and intuitive interface.

Note: Weaverize owns the domain name montage.video

TRL 7

Anonymization

20 People Anonymization : Blurring

TRL 9

21 Anonymization by face replacement

Replaces faces in images with realistic alternatives, maintaining posture, lighting, and visual context.

Méthode B

TRL 3

21 Anonymization by face replacement

Example 1

Method A

TRL 3

21 Anonymization by face replacement

Example 2

Method A

21 Anonymization by face replacement

Example 3

Method B

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Other Technologies

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Multi-View Video player

View a video captured from multiple angles; the viewer can switch instantly or follow pre-programmed views as the video progresses

Ideal for events and educational videos.

- Works on desktop, mobile, and smart-TV.
- Bypasses Omni-Live's patent.

TRL 8

Multimedia Processing

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Upload/Storage

High-Performance Transcoding

Fast video re-encoding
during upload

TRL 9

Multimedia Processing

Image and Video Thumbnail Creation

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TRL 9

Multimedia Processing

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Watermarking

Upscaling

x2

TRL 9

Traitements multimédia

Image Generation

Input prompt

Action shot of 3 young women running a hurdle, beautiful intricate faces, jumping over hurdle, (ultra realistic), 8k, photorealistic, photography, dslr, fujifilm XT3 ADDBASE
white young woman with blonde hair and a blue top sprinting toward hurdle, beautiful face, next to 2 other women ADDCOL
black young woman with red top jumping over over a hurdle, beautiful face, next to 2 other women ADDCOL
asian young woman with green top jumping landing from a hurdle, beautiful face, next to 2 other women

TRL 8

Web Scraping of People

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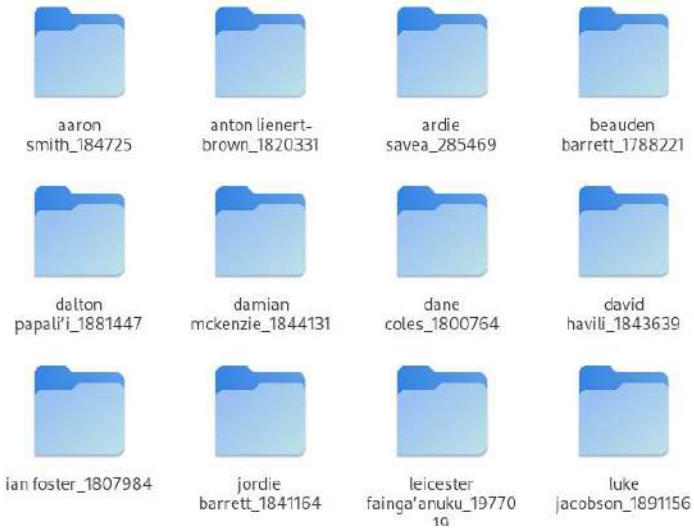
List of people to recognize :

Aaron Smith, Anton Lienert, Ardie Savea, Beauden Barrett, Brodie Retallick, Caleb Clarke, Cam Roigard, Codie Taylor, Dalton Papalii, Damian McKenzie, Dane Coles, David Havili, Emoni Narawa, Ethan de, Finlay Christie, Fletcher Newell, Ian Foster, Jordie Barrett, Leicester Faingaanuku, Luke Jacobson, …

Automatic retrieval of photos :



TRL 9

Web Scraping and Automatic AI Response

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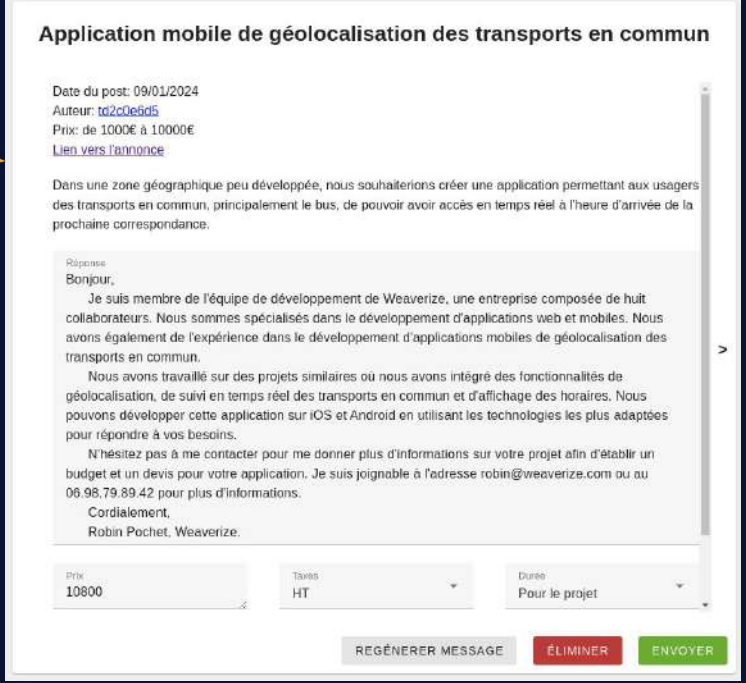
Ad available on a specialized website

Automatically retrieves information from specialized sites and generates AI-based replies.



TRL 9

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Smart Chat

The integrated Smart Chat allows users to communicate seamlessly — share feedback, ask questions, and collaborate directly without leaving the workspace.

TRL 8

Summary of presented technologies

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Journalists' Needs

- Natural language search
- Image description
- Text translation and summarization
- Audio-to-text transcription
- Face and eye position detection
- Face matching
- Image cropping

Clients' Needs

- Object and brand detection
- OCR
- Image saliency mapping
- Dominant color calculation
- Pose estimation
- Gaze and face pose estimation
- Landmark recognition

Video Creators' Needs

- Depth estimation
- Depth-based cut-out
- Semantic segmentation
- Video editing by transcription
- Person anonymization
- Weaverize Studio: Collaborative Video Editing
- Feedbacks: Clear client feedback

Other Technologies

- Video upload and re-encoding
- Thumbnail creation
- Watermarking and upscaling
- Image generation
- Web scraping of people
- Video Editing API

Technical Integration

Ressources fonctionnelles

- Processing and analysis on GPU (NVIDIA / CUDA)

- Containerized micro-services (nvidia-docker)

- Deployable on CSP or On-Premises (Microsoft Azure, OVH Cloud, Amazon AWS, ...)

Ressources fonctionnelles

Possibilities

- Exposure via REST/GraphQL API
- Orchestration and scheduling of operations
- Custom integration with other tools
- Execution of processing tasks on the Weaverize Cloud

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Your R&D Partner in the Creation of Innovative Applications

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