



# Problem

## **VISUAL INSPECTIONS PERFORMED BY HUMAN OPERATORS: INEFFICIENT**



**Complex on large scale** 

**Time consuming** 

**Poor replicability** 

Only one data source

**Difficult integration with IT systems** 

Problems affecting multiple industries



A Manufacturing Logistics







Engineering



# Solution

## **AI-EMPOWERED VISUAL INSPECTIONS**





## Scalable

Fast

**Replicability and comparability** 

Data from different sources

Integration with IT systems



# Market



A growing market, with different applications

Logistics is part of this trend

### Global Surface Vision and Inspection Market



7.66

Global Surface Vision and Inspection Market (share % by application in 2022)







Established in 2016 in Monza (Italy), **Elif Lab** is an innovative company **specialising in developing data science and artificial intelligence** solutions.



We extract value from **different types of data** and from **multiple sources** to **optimize** and **automate complex processes** in different industries.



# Solution

## **VisioYao** applied to Pharmaceutical Logistics

(assert (out (msg (sym-cat "not ok. Element: " ?element id " with type: " ?element type))

It mimics the work of an operator comparing the content of an order to understand if it is fully

and correctly picked, using pictures of totes taken at different times during a picking process.

ELIF VisioYa	0					gabriele@ellflab.com	Logout
ashboard	Inspection Details	Expected Content					
rocess rimeine	1 Acquired 2 Checked 3 Validated	FECHA CADUCIDAD	MATERIAL	CANTIDAD	NOMMATERIAL		
I Image Check		21.02.0024	0726920	4	CUSICBON OFT FTE COULTONS		
a mage aneen	MIR - 1530.19.25/04/2022 Cubeter 051998: Artes Tepedare	29.02.2024	6519608	1	AFLOYAN 15 MG 30 COMP		
		28.02.2025	7102885	1	ESPIDIFEN COLA-LIMON 600MG 20S		
	00	31.08.2024	6543528	1	ENALAPRIL+HCTZ VIR 20MG 28CO		
	and the second sec	30.04.2026	9520694	1	LEXATIN 3 MG 30 CAPS	•	
		31,08.2026	6728222	1	LIVAZO 1 MG 28 COMP		
		30.09.2024	9151324	3	SERC 16 MG 30 COMP	•	
		31.10.2024	8043286	2	ESIDREX 25 MG 20 COMP	•	
	The second secon	31.03.2024	6980934	1	EUTIROX 75 MCG 100 COMP		
		31.10.2026	9914974	2	NOCTAMID 1 MG 30 TABL		
		31.12.2024	6863077	1	FLUTICREM 0.5MGG CR 60 GR	•	
		31.01.2025	6924594	1	CORDIPLAST 10 MG 30 PARCHES	•	
		31.08.2023	6636824	1	SECALIPSUPRA 160 MG 30 COMP		
		28.02.2027	7872917	1	DIAZEPAM NORMON 5 MG 40 COMP		
	The second	31.08.2024	6596807	1	STOPCOLD 20 CAPS		
	And the second se	28.02.2025	6770139	1	VALTREX 500 MG 10 COMP	•	
		30.09.2024	8747764	1	TANAKENE SOLU 50 ML		
		31.12.2022	7149743	1	TRINOMIA 100405MG 28 CAPS	•	
		30.09.2025	9919016	1	SEPTRIN FORTE 20 COMP	•	
		User Validation	1990532	1	AKOZAN SUEKO HISIOL 10ML 100DS	· ·	
	Rule Evaluation	Ok					
	Some boxes seem to be missing						
	(B)	User Comment					
	not ok. Element: 3 with type: b	Submit Comment					
	Applied Rules	(X) Operator Al Evaluation done					
	<pre>(defrule some-not-a (element (element_type ?element_type) (element_id ?element_id)) (text (neq ?element_type "a"))</pre>	Operator 001 Rule outcome not yet o	nfirmed				





## **COMPETITIVE ADVANTAGES**

	<u> 111</u>	
붜	NLP	F
	222	

Natural language (transparent AI)



Multimodal identification (MMID: visual appearance, volume, barcodes...)



**Device-agnostic** 



Computationally light and scalable, can work in real time



Generate alerts sent and integration with external systems



Faster extension to new cases Can work even when "no big data" is available





## **COMPETITIVE ADVANTAGES - Extensibility And Data Value Chain**



**Extendible to other domains** (e.g. asset management for energy) and capable of **handling different data** (e.g. video instead of images, sensors, reports...).

#### Possible future extension to the

### management of the whole process:

anomalies in the machines, transport bills,

data from the end customer (pharmacies).



# Competition































OMRON

## **BIG PLAYERS DIFFERENT APPROACHES**

Hardware dependent

Using only barcodes (what if they are covered?)

CV not integrated with IT systems

Robots for picking (use case)



# **Business Model**

## NOW



### **ON-PREMISE**

Specialized on specific domains

Business Model: Development services

+ subscription (maintenance/updates)

### TO BE



Generalized solution for multiple domains

Business Model: Subscription (maintenance/updates)

+ customizations



## Core team

#### Recruiting:

- Full Stack Developer
- Marketing specialist



#### Paola Bonesu (Co-founder & Director)

<u>10+ years in data analytics</u> <u>7+ years in project and business management</u> <u>EIT Manufacturing LEADERS</u> - Women in Europe developing solutions / initiatives addressing manufacturing-related challenges with strong financial, environmental, or societal impact.



#### Gabriele Lami (Co-founder & CTO)

<u>Al Engineer</u>. Mathematician with 10+ years in developing Artificial Intelligence, Data science and algorithms solving complex problems in different industries. Expertise in computer vision and text analytics, neural networks, robotics, logic and probabilistic models. <u>Al Talent</u> recognized by Al4Europe.



#### Lucas Liendo (Full Stack - Al Infrastructure Developer)

10+ years in <u>developing software solutions</u>. Expertise in developing and deploying AI algorithms pipelines.



#### Roberto Errichelli (Sales & New Business Development)

20+ years in <u>sales and new business</u> in the manufacturing sector and distribution of medical devices.
10+ years in <u>business management</u>.



# Awards





VOJEXT

2020: **Freu3D** 3D objects for augmented reality.

2022: **AWoid** computer vision for autonomous navigation

2022: **JinZone** algorithms for autonomous robots

2022: **Farm Scan** AI for precision agriculture





2023: VisioYao computer vision for automating logistics

### 2022: EIT Manufacturing LEADERS

Women in Europe addressing manufacturing-related challenges with strong financial, environmental, or societal impact.





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