NEXT VISION

Spin-off of the University of Catania

https://www.nextvisionlab.it/

Artificial Intelligence to Assist Humans Where They Live and Work

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Università di Catania

IMAGE PROCESSING LABORATORY

Founders

xenia®
SOFTWARE SOLUTIONS

Dr. Francesco Ragusa
Chief Executive Officer
Chief Technology Officer

Dr. Antonino Furnari
Chief R&D Officer

Prof. Giovanni Maria Farinella
Chief Scientific Officer

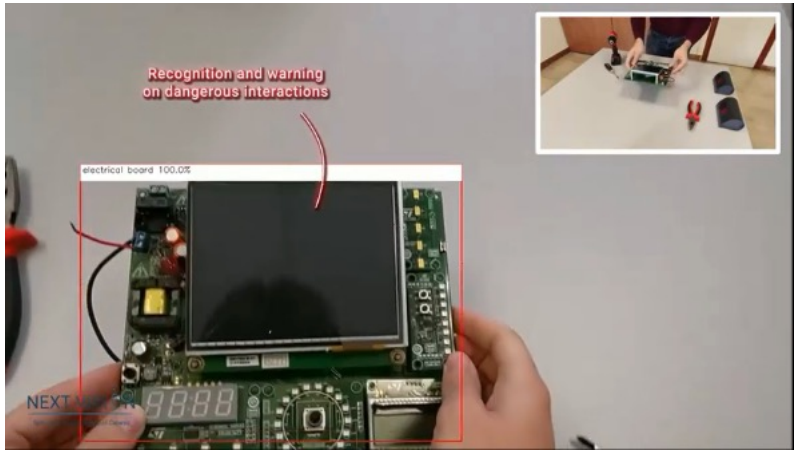
An academic Spinoff of UNICT based in Sicily with an International Vision

Team

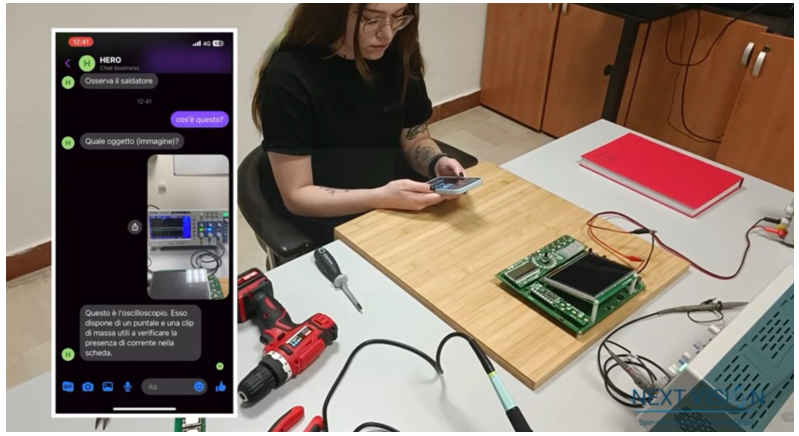
Three Solutions

NAIROBI: Indoor Visual Navigation

NAOMI: Image-Object Interaction Understanding



HERO: Human-Machine Interaction

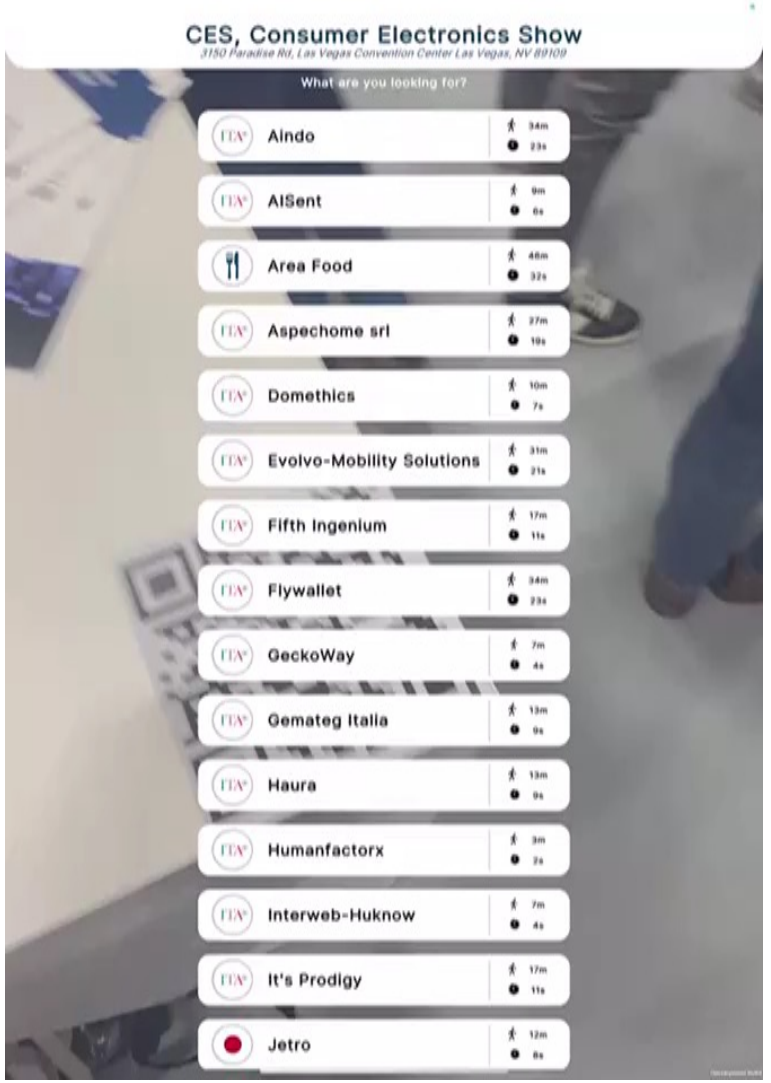


NAIROBI

- Intelligent Navigation
- Image-based Localization
- Augmented Reality
- Multi-platform

Founders of Next Vision are authors of patents related to the developed technologies

Demo Video



NOKIA

Università di Catania

UNIONE EUROPEA

REPUBBLICA ITALIANA

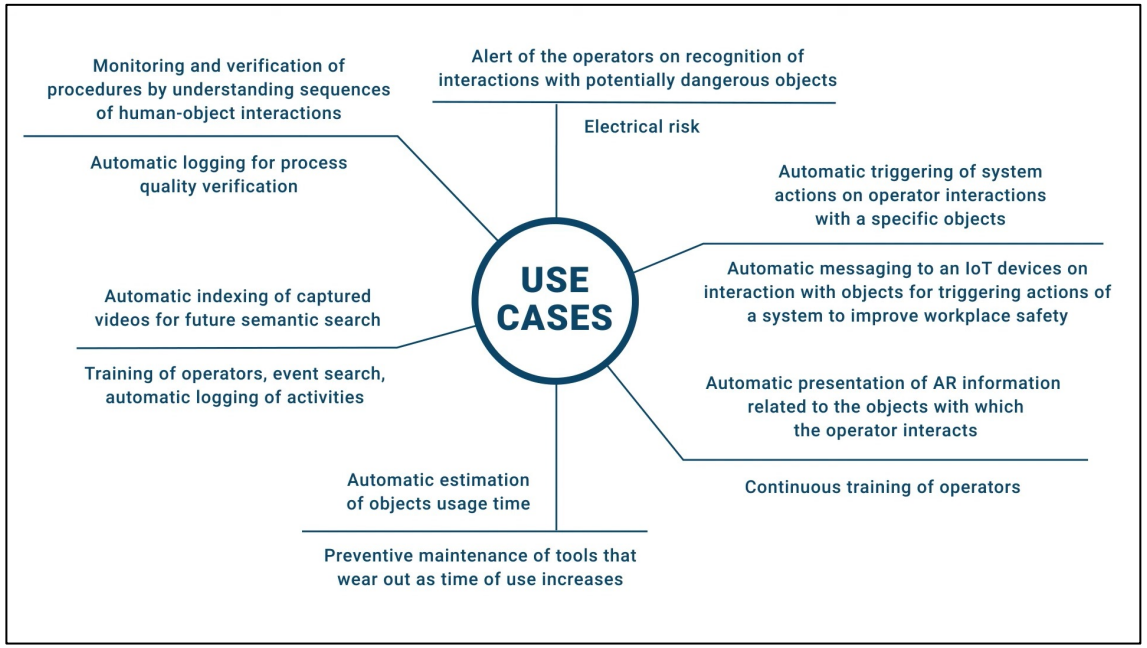
REGIONE SICILIANA

FESR SICILIA 2014-2020

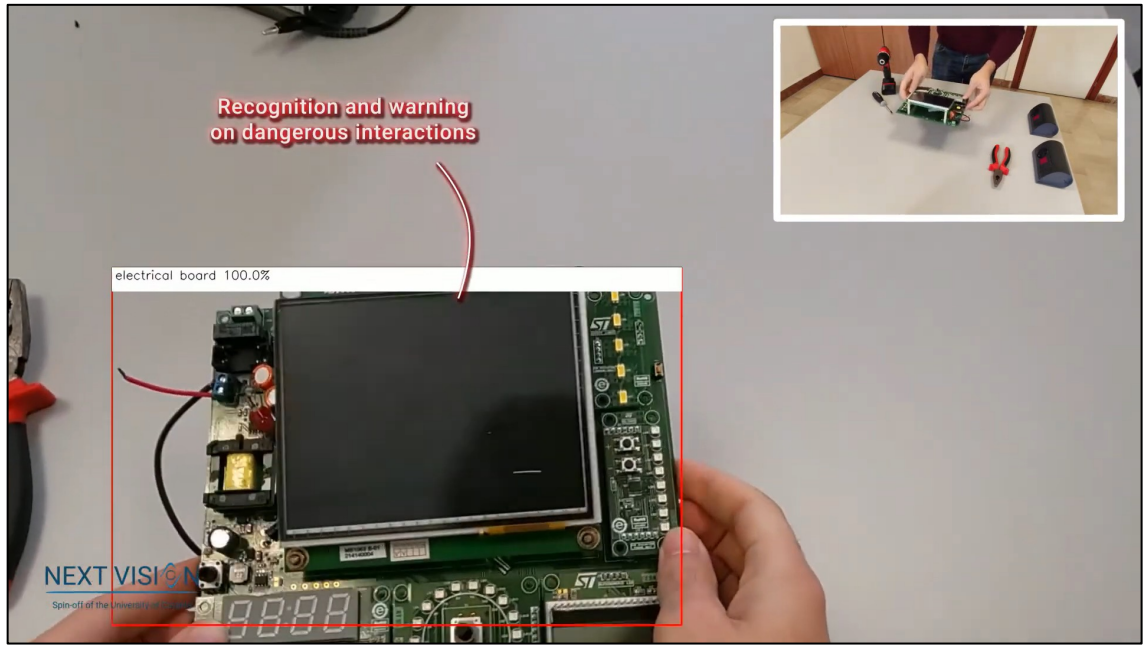
CES

NAOMI

- **NAOMI** is an AI Assistant able to support humans to monitor interactions, predict/anticipate next interactions, verify correctness in a sequence of interactions.



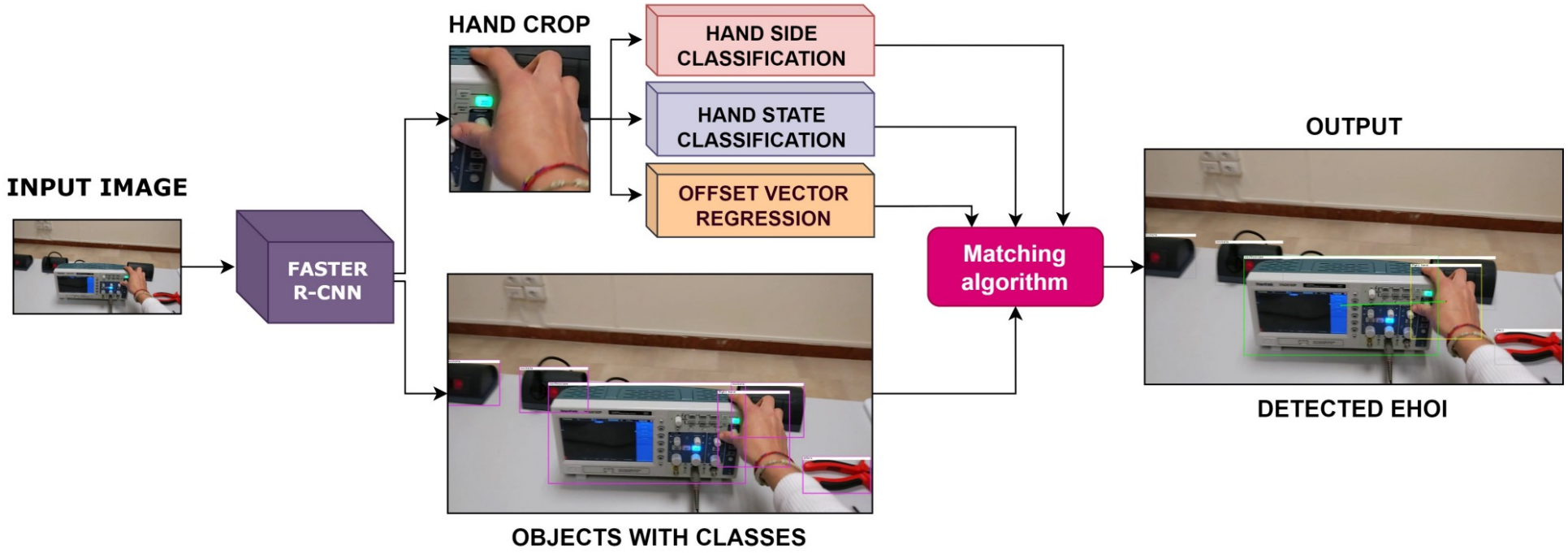
Use cases



The video shows an example of object interaction monitoring.
The operator is notified on an interaction with a dangerous object.

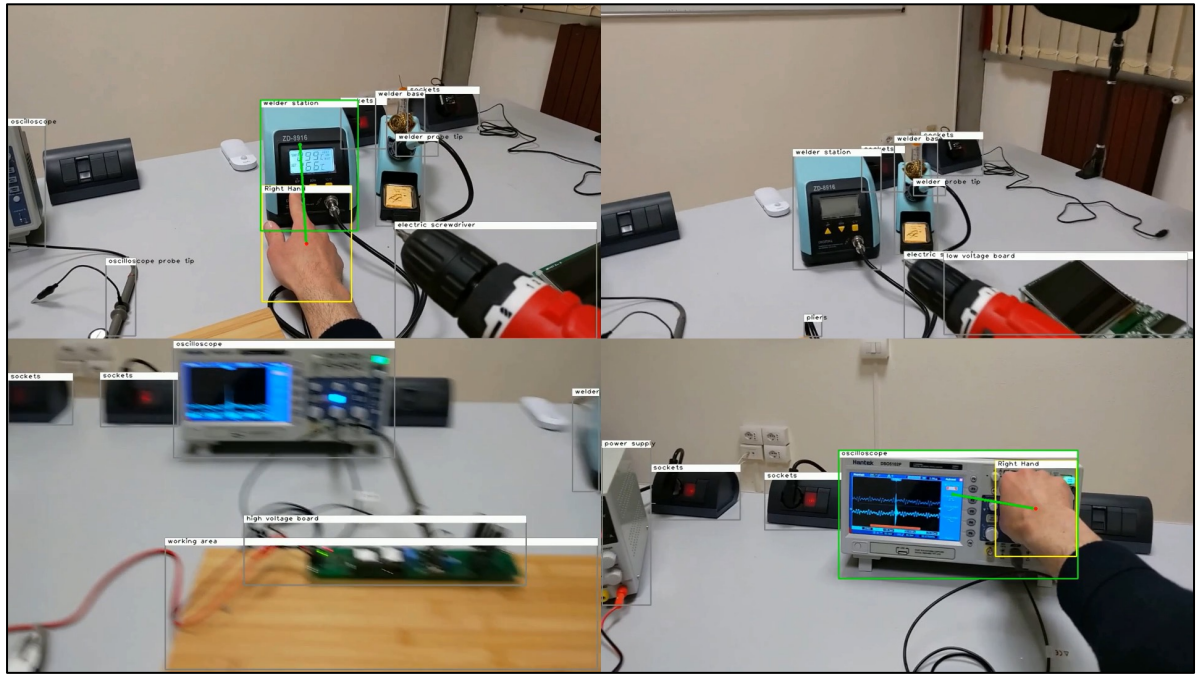
NAOMI: Architecture

- Our system extends a two-stage object detector with additional modules specialized to recognize human-object interactions.
- The proposed method exploits different data signals, such as instance segmentation maps and depth maps, to improve the performance of classic HOI detection approaches.

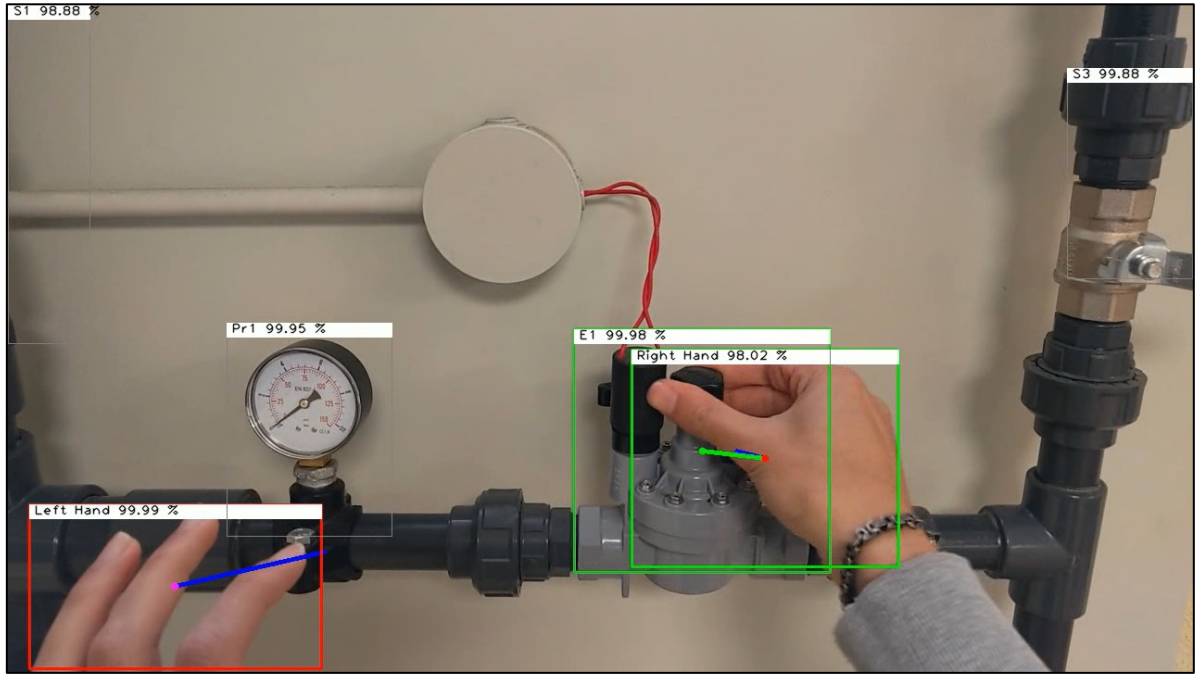


Rosario Leonardi, Francesco Ragusa, Antonino Furnari, Giovanni Maria Farinella (2022). Egocentric Human-Object Interaction Detection Exploiting Synthetic Data . In International Conference on Image Analysis and Processing (ICIAP) .

Demo Video: Industrial scenarios



Industrial Laboratory



Hydraulic Panel

HERO

GOAL:

- Support workers in unknown industrial domains and complete industrial procedures with ease

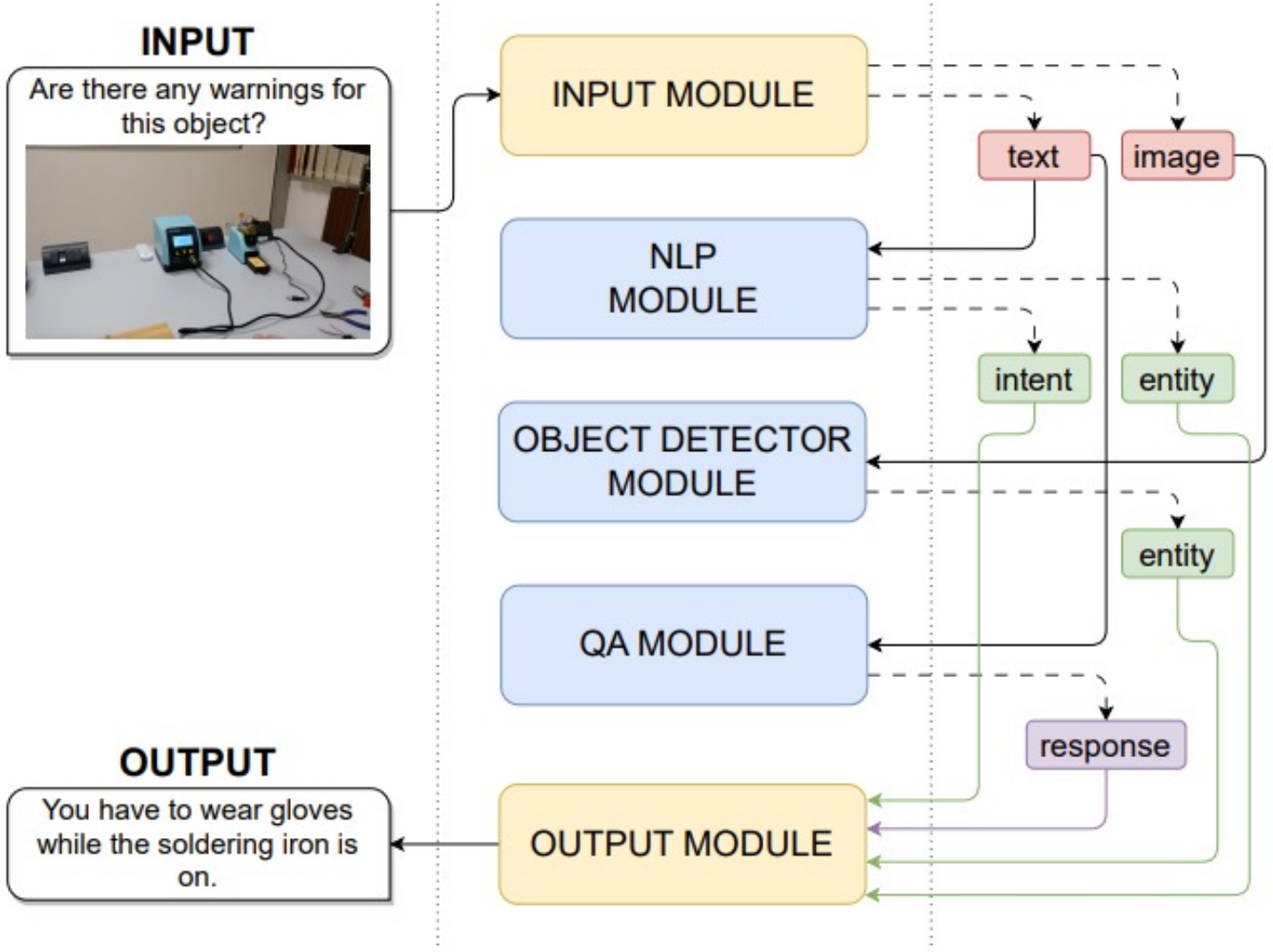
FEATURES:

- Understands questions posed in natural language
- Exploits visual cues obtained from images made by the user from their point of view
- Answers in natural language

What's this object? How am I supposed to use that?

This is the power supply. Adjust the current knob until the green LED lights up.

HERO


INPUT
Are there any warnings for this object?
INPUT MODULE
text
image
NLP MODULE
intent
entity
OBJECT DETECTOR MODULE
entity
QA MODULE
response
OUTPUT
You have to wear gloves while the soldering iron is on.
OUTPUT MODULE

Demo Video

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