

OAK: Onboarding with Actionable Knowledge

Hes·so VALAIS WALLIS

 School of Engineering



Turning operators experience into actionable knowledge

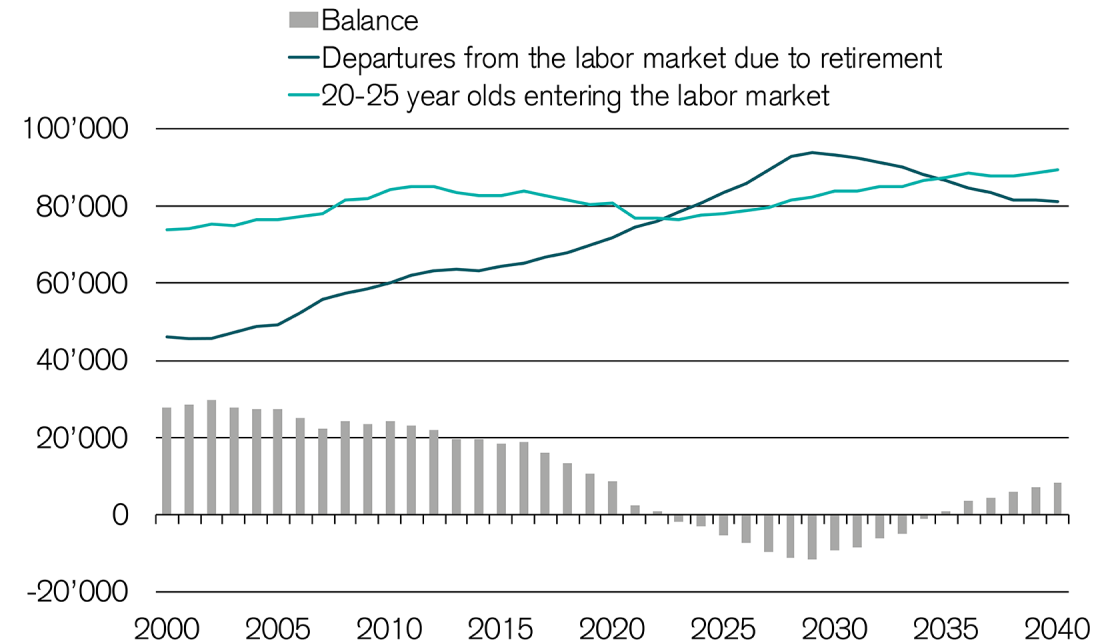
Prof. Dr. Francesco Carrino
Dr. Marine Capallera

The problem

“Employees recruited 3 months ago train employees recruited 3 weeks ago”

The problem

- Loss of knowledge when experienced operators leave their jobs
- In Switzerland: number of new retirees will possibly reach 100'000 per year
- Training is often expensive, repetitive, sub-optimal

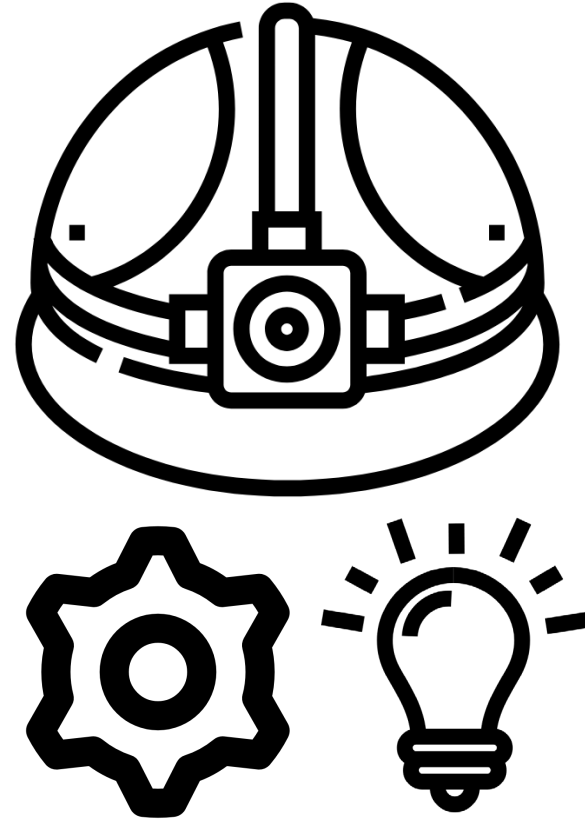


Sources: Swiss Federal Statistical Office, Credit Suisse

The question



**Is it possible to collect, store,
and query Operators' know-
how?**



The question(s)



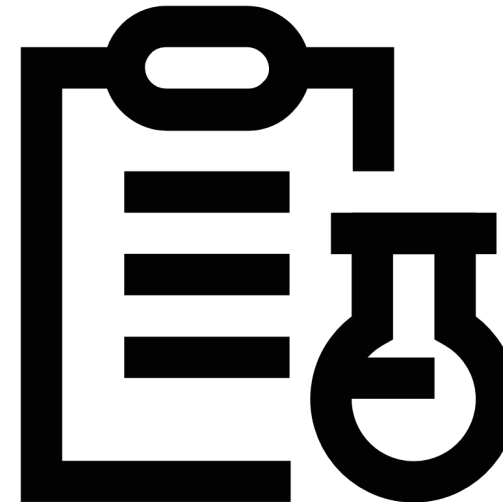
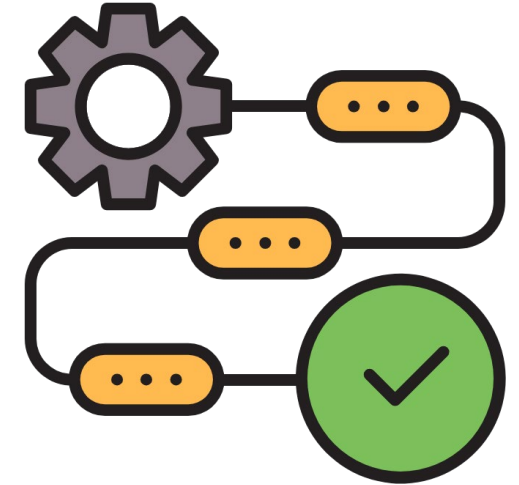
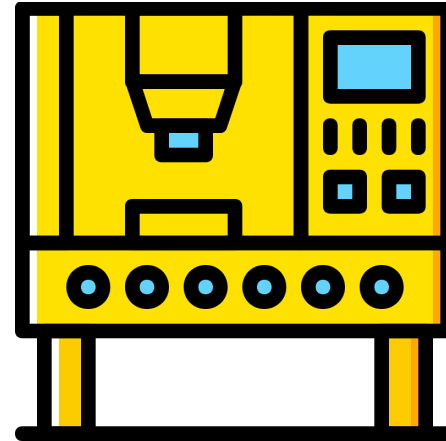
What is the know-how of an operator?

The knowledge of a machine...

... a process ...

... a methodology...

...?

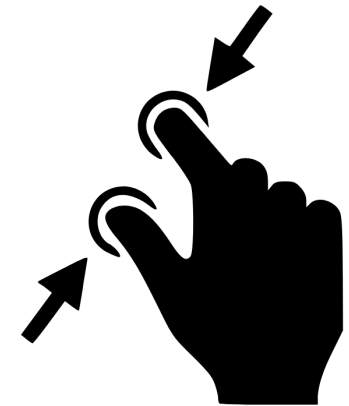
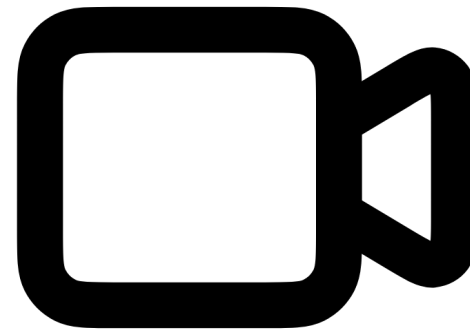
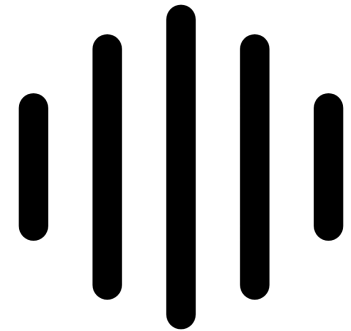


The questions

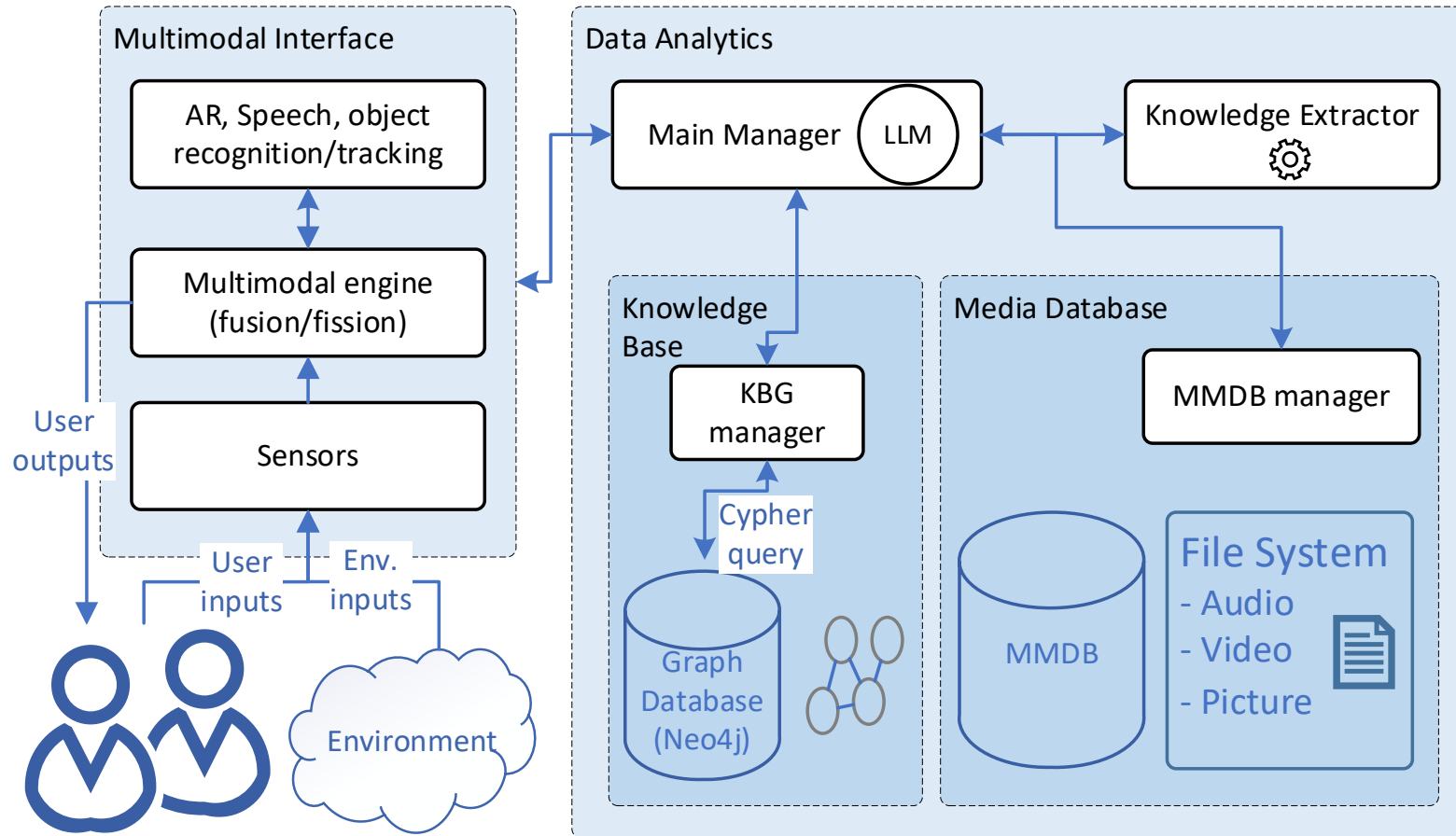


How to describe it efficiently?

- Text?
- Audio?
- Video?
- ...
- Gestures?



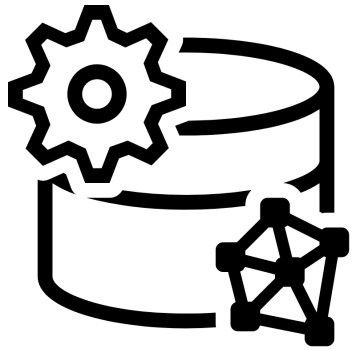
Our proposition



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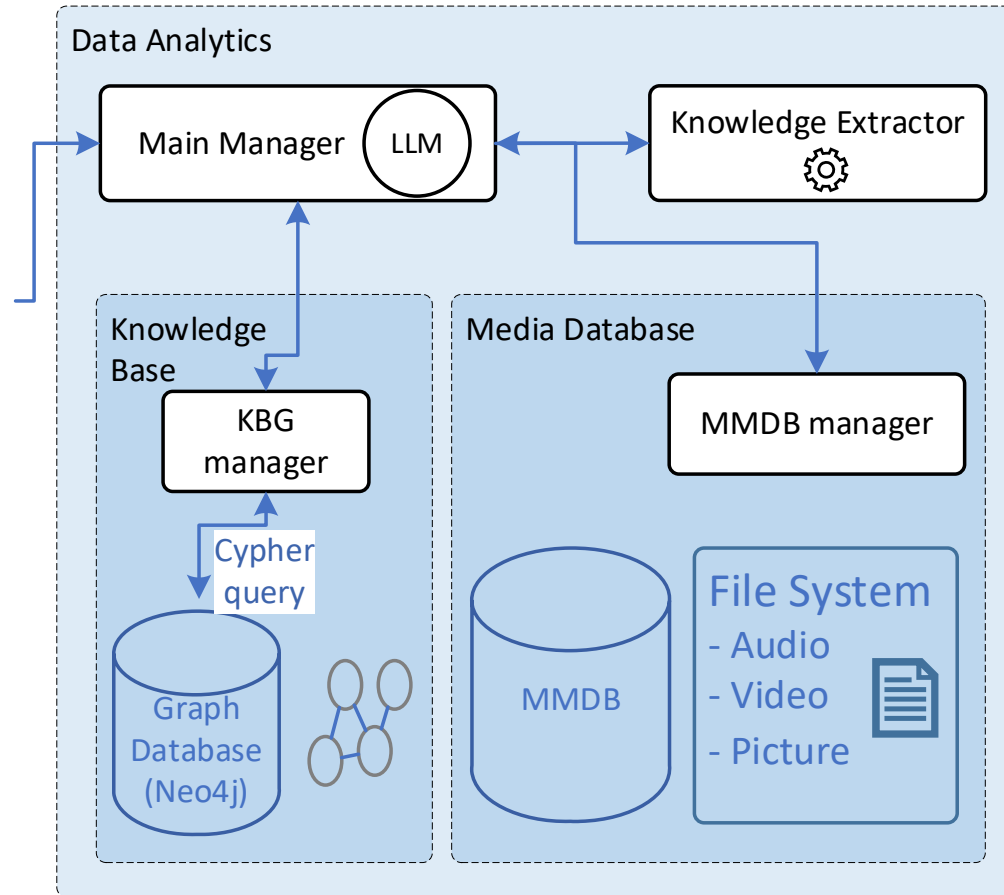
Onboarding with
Actionable
Knowledge

Our proposition



Knowledge Graph
(Embedding)

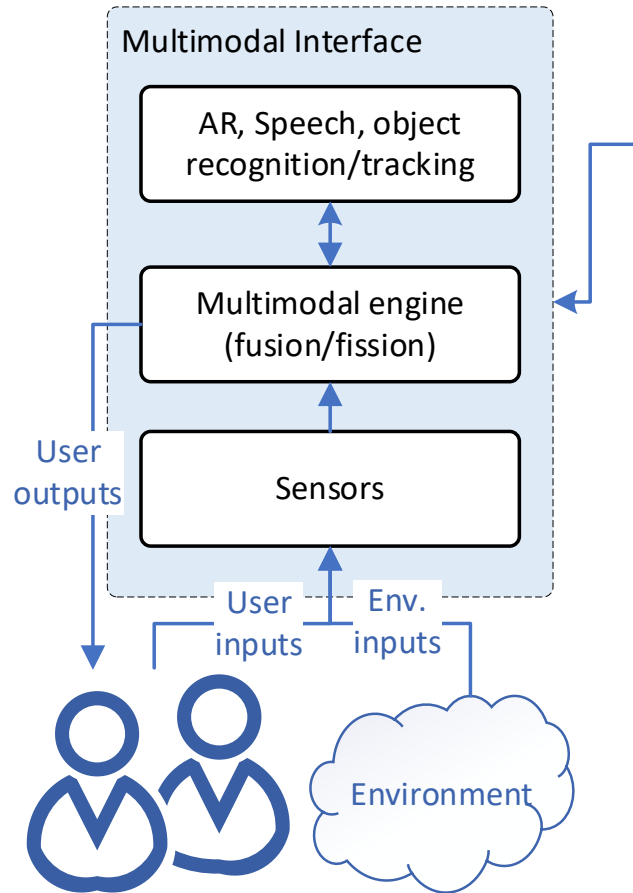
Retrieval-
augmented
generation
(RAG)



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Onboarding with
Actionable
Knowledge

Our proposition



**Onboarding with
Actionable
Knowledge**

First results: POC

Multimodal interface (mobile)

- Multimodal interface
 - Text, audio, video
- Augmented reality
- Object tracking (yolo v8)

Data Analytics

- Knowledge base embedding
- Retrieval-augmented generation (RAG)

HOME ← RETOUR Titre de la mesure (numérique)

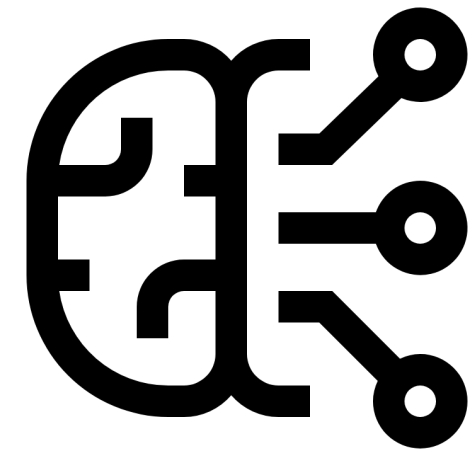
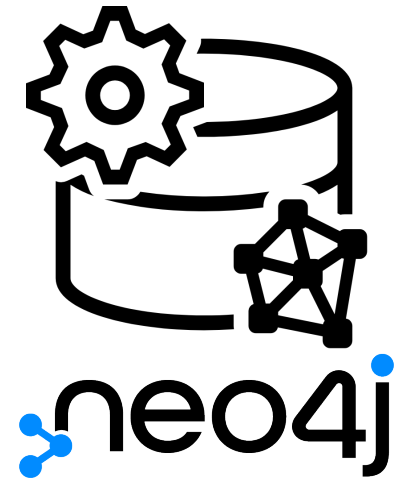
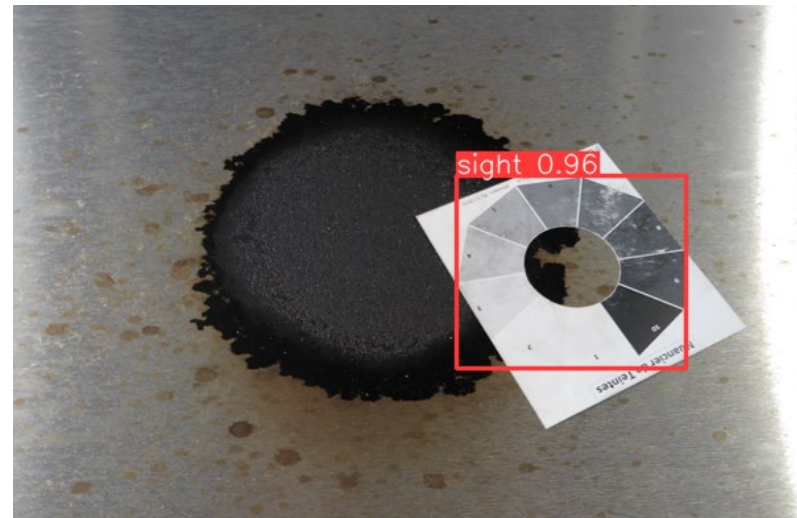
Instruction pour effectuer la mesure :

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4	5	6
1	2	3
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Valeur mesurée

Valider



Conclusion: the real world is complex



What's next?

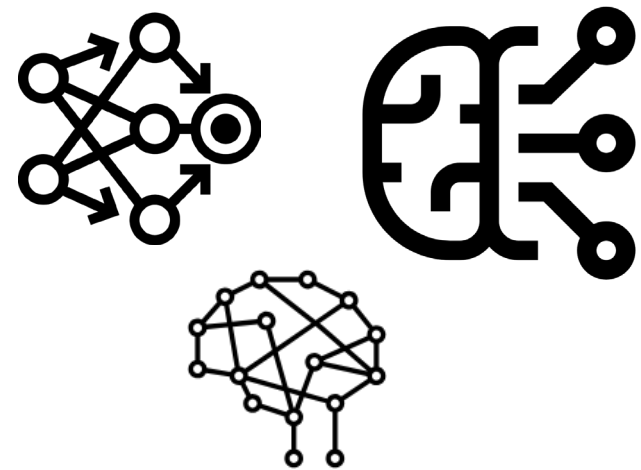
Usability study

- Multimodal interface
 - Augmented reality
 - Object tracking



Approaches and models comparison

- Data analytics
 - Relevance
 - Computational resources
 - Data security
 - Multilanguage



Questions? Contact us!



The project & the team



<https://oak.spl.humantech.institute/>

The partners

