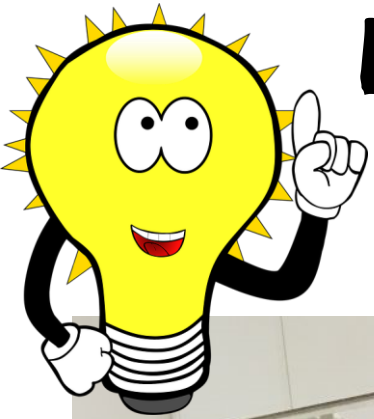


Smart Factory

Exemple de AI Custom Vision

Démo basée sur le VISEO SMART FACTORY LAUNCHPAD !

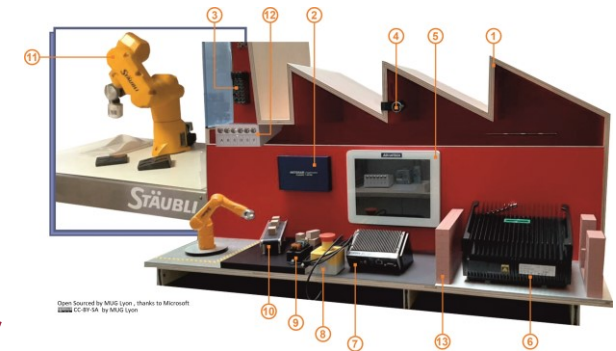
Powered by



Vincent THAVONEKHAM

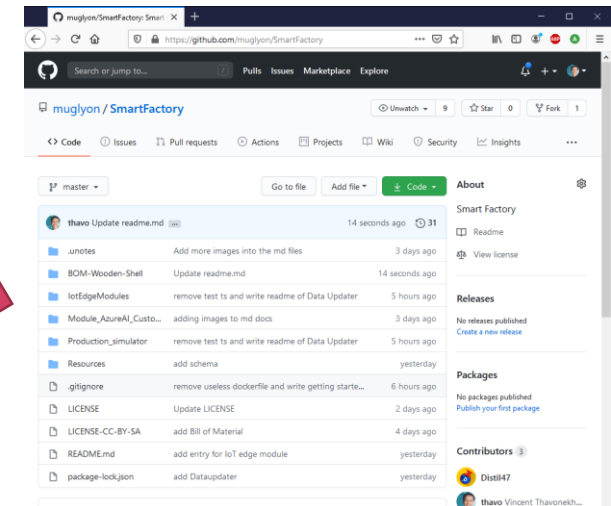
Head of Smart Factory VISEO

Business Excellence Director | MVP Azure & RD
vincent.thavonekham@viseo.com



BOM: Bill of Material

C'est Open Source !



Code Source

2020 Vincent Thavonekham
@Viseo | MVP | RD



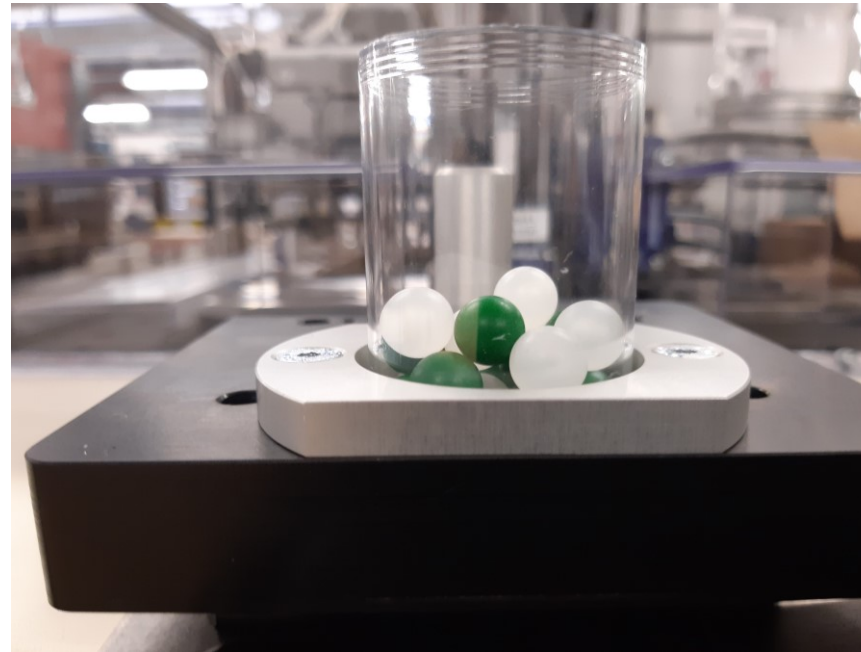
Schneider
Electric



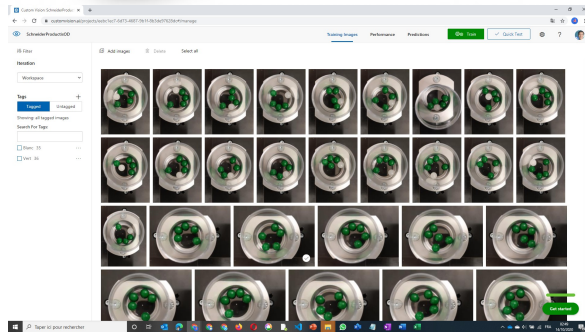
CONTEXTE

Sur la machine PRODUCTIS / Industry 4.0

- Interrogation :
- Lors du remplissages de bocaux, comment garantir qu'aucune bille étrangère ne s'est introduite dans le bocal ?



Exemple d'approche en 3 étapes

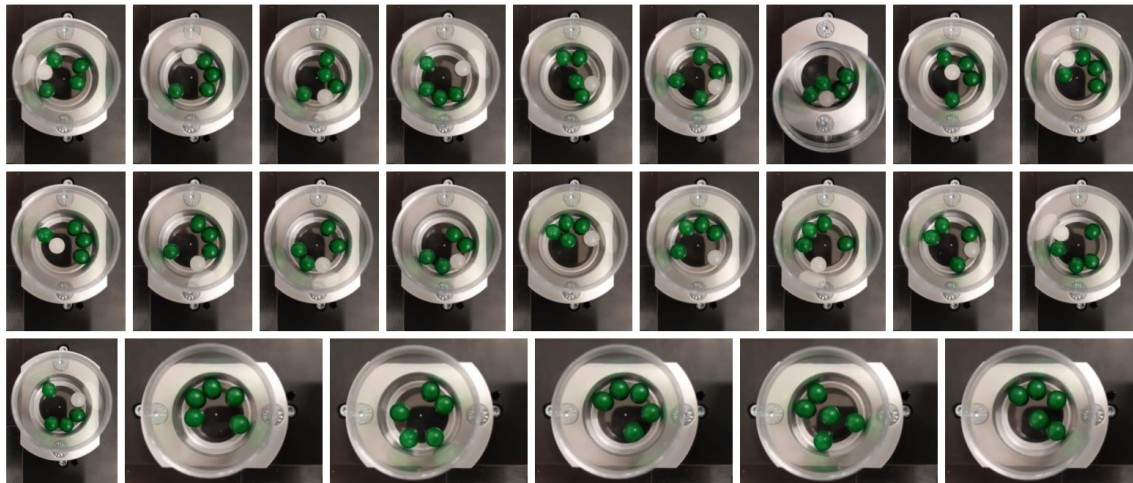


1. Brancher une caméra industrielle
2. Entraîner une AI, avec par exemple Azure Custom Vision
3. Et exporter ce modèle dans PRODUCTIS

Partie 1 : captation des images

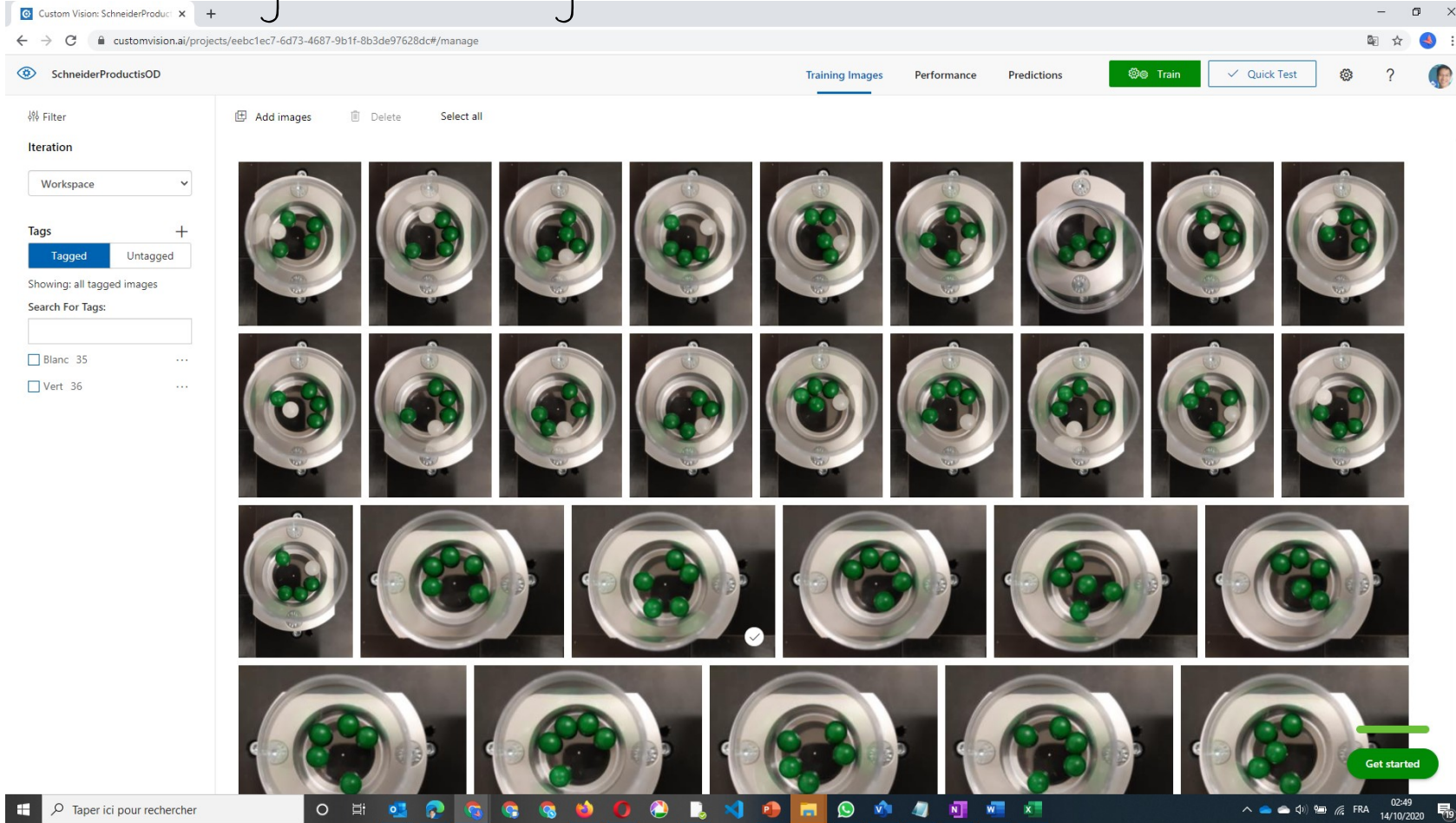


1. Brancher une caméra industrielle
2. Prendre plus de 60 photos du bocal en vue de dessus

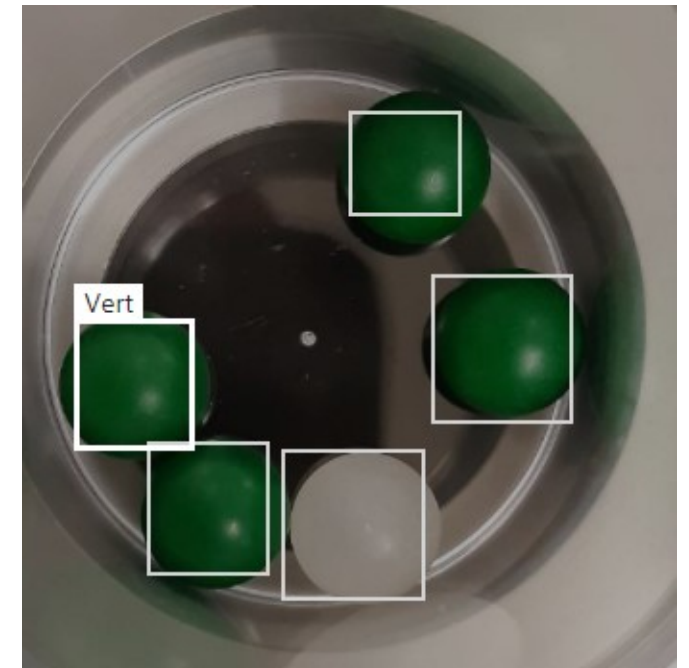


Partie 2 : AI avec Azure Custom Vision

1. Charger ces images dans Azure Custom Vision

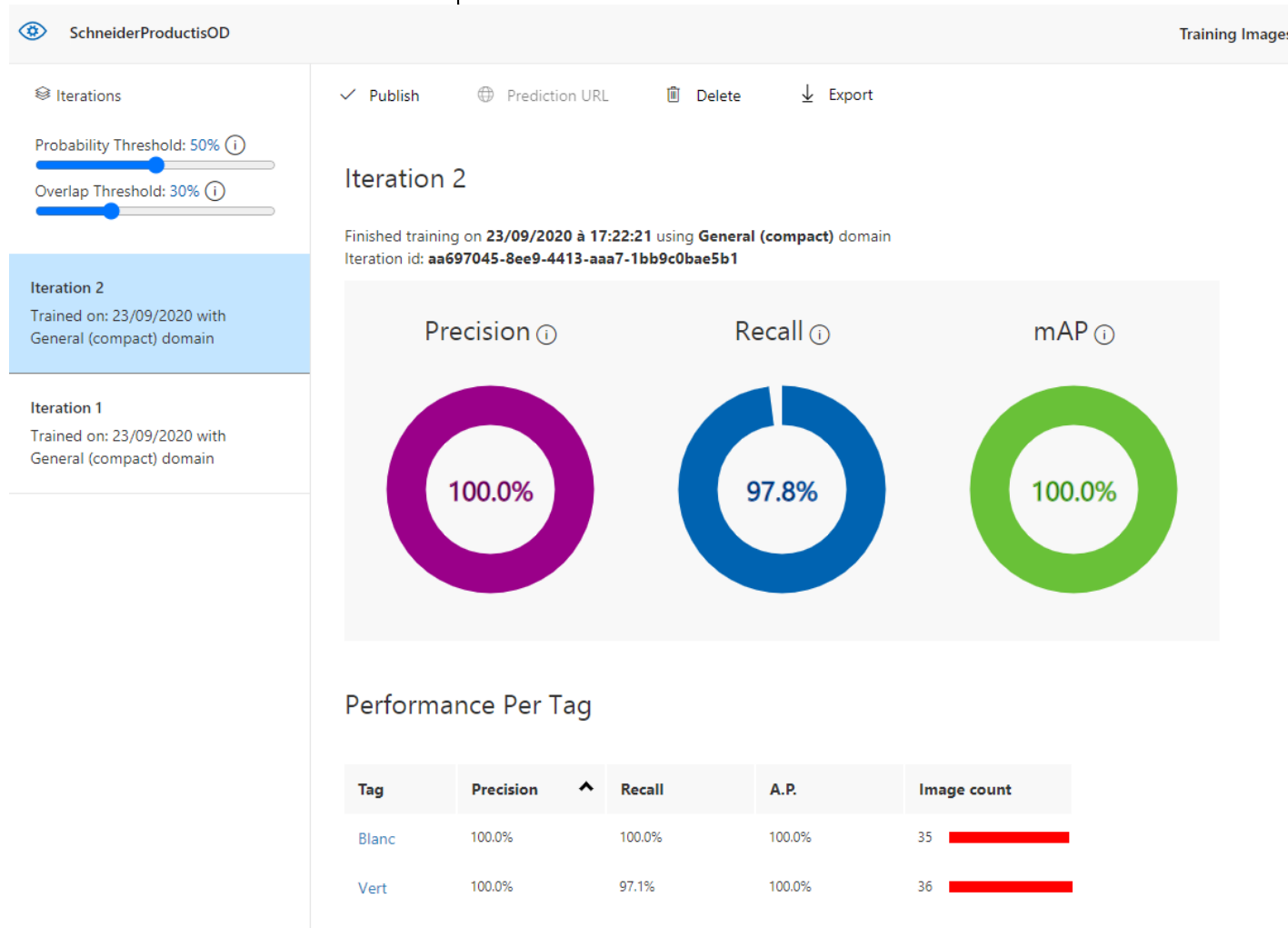


2. Détourer les billes vertes et blanches



Partie 2 : entrainer

Entrainer l'IA via plusieurs « itérations »



Partie 3 : exporter le modèle d'IA

Exporter vers PRODUCTIS

SchneiderProductisOD Training Images

Iterations

Probability Threshold: 50% ⓘ
Overlap Threshold: 30% ⓘ

Iteration 2
Trained on: 23/09/2020 with General (compact) domain

Iteration 1
Trained on: 23/09/2020 with General (compact) domain

✓ Publish ⌐ Prediction URL 🗑 Delete ⬇ Export

Iteration 2

Finished training on 23/09/2020 à 17:22:21 using General (compact) domain
Iteration id: aa697045-8ee9-4413-aaa7-1bb9c0bae5b1

Precision ⓘ

100.0%

Recall ⓘ

97.8%

mAP ⓘ

100.0%

Performance Per Tag

Tag	Precision ^	Recall	A.P.	Image count
Blanc	100.0%	100.0%	100.0%	35 <div></div>
Vert	100.0%	97.1%	100.0%	36 <div></div>

Choose your platform

⬇ Export

iOS
CoreML
iOS 11

TF
TensorFlow
Android

ONNX
ONNX
Windows ML

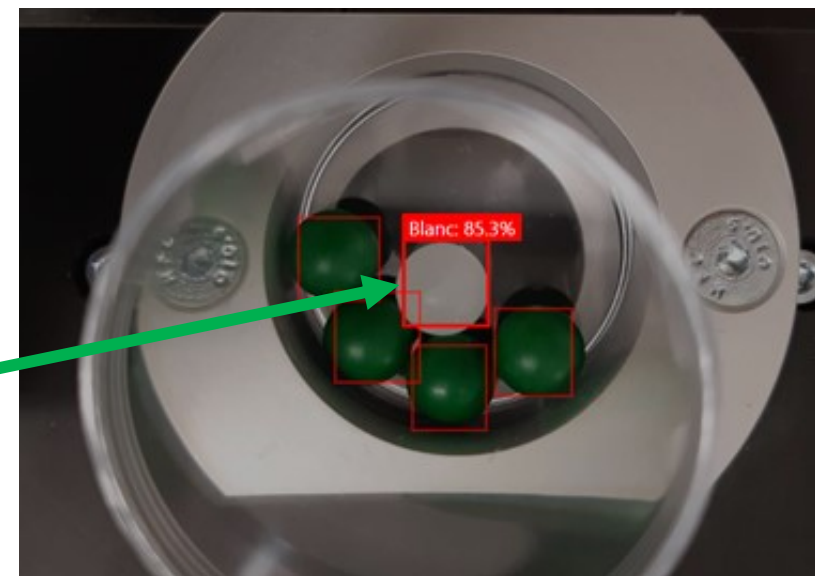
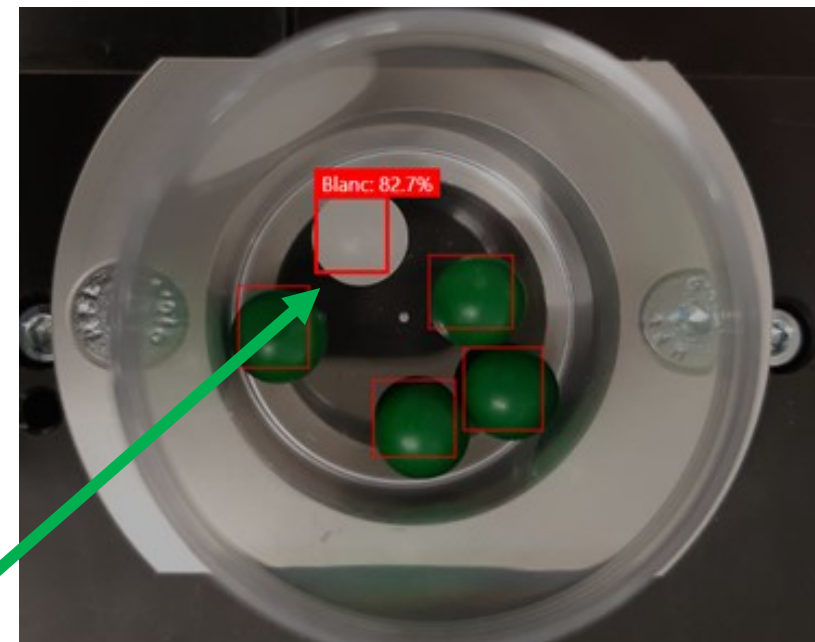
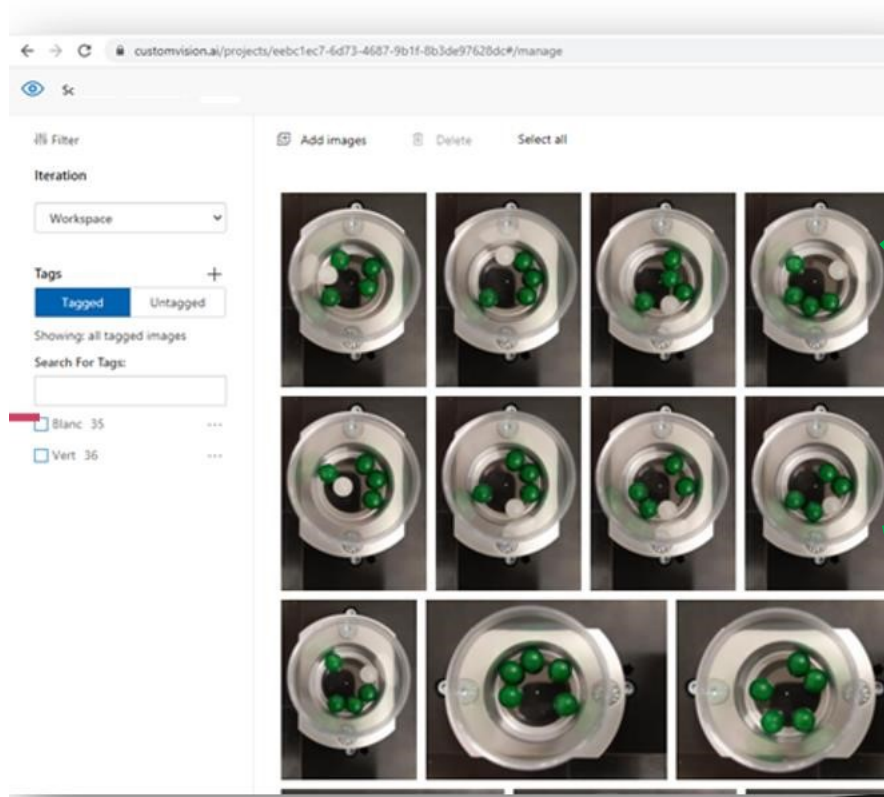
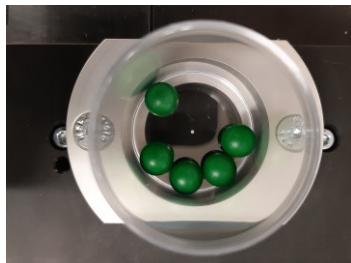
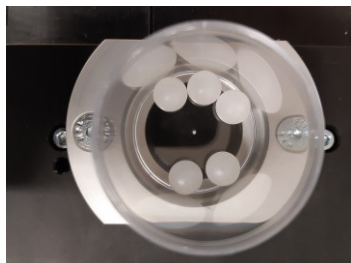
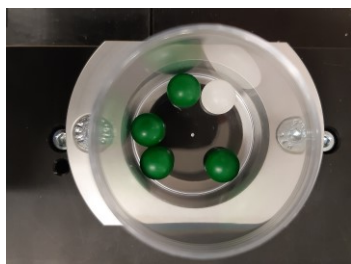
DF
Dockerfile
Azure IoT Edge, Azure Functions, AzureML

VAIDK
Vision AI Dev Kit ⓘ

En synthèse

L'IA entraînée :

- détecte et détecte les billes
- surtout comprend de quelles couleurs elles sont, ce qui permet de trouver les intrus !



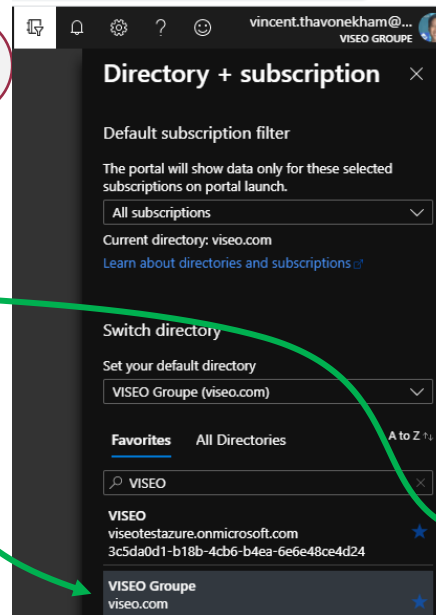


ANNEXES

CONFIGURATION DE LA DEMO :

- **AAD Tenant ID : VISEO.COM**
- **Azure Subscription : VSEnt vince.thavo@viseo**
- **Droits Single Sign On Office365 :**
 - Vincent.thavonekham@viseo.com = admin
 - jvieille@jeanvieille.onmicrosoft.com = readonly
 - ederrien@enjoyyourbusiness.fr = readonly
- **URL du site Custom Vision :**
 - <https://www.customvision.ai>
 - End point <https://westeurope.api.cognitive.microsoft.com>
 - Subs: /subscriptions/b6511732-AAAA-BBBB-CCCC-FFFFFF27d50/resourceGroups/schneider/providers/Microsoft.CognitiveServices/accounts/SchneiderProductisIA
- **URL Github du projet OpenSource :**
https://github.com/muglyon/SmartFactory/tree/master/Module_AzureAI_CustomVision

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Add role assignment

Role ⓘ

Cognitive Services Custom Vision Reader ⓘ

Assign access to ⓘ

User, group, or service principal

Select ⓘ

ederrien@enjoyyourbusiness.fr

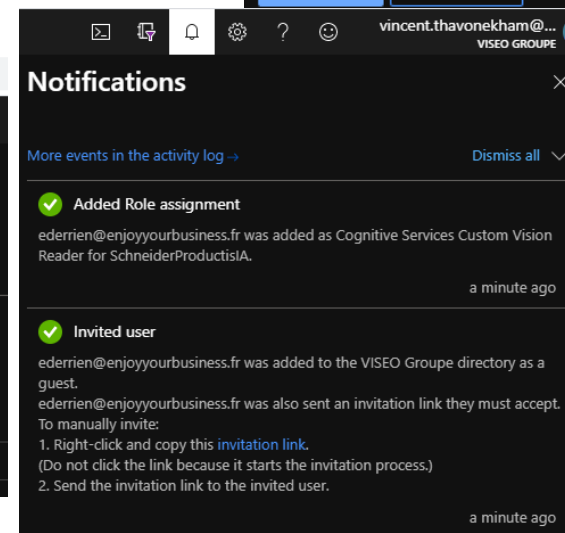
No users, groups, or service principals found.

Selected members:

ederrien@enjoyyourbusiness.fr (Guest) Remove

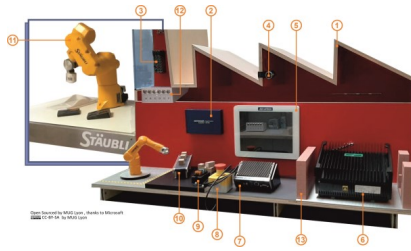
Save

Discard



OPEN & EXTENSIBLE PLATFORM

Powered by



BLOCKCHAIN

INDUSTRIAL
IOT

OPC UA

SUPPLY CHAIN

BLOCKCHAIN

VR / AR



ARTIFICIAL
INTELLIGENCE

SECURITY :
PEN - TESTS, X.509...

ARCHITECTURE:
MICRO-SERVICES

ARCHITECTURE:
EVENT-STORE

DEV-OPS
INFRA AS A CODE...

ERP / MES

INDUSTRIAL &
ROBUST EQUIPMENT



CLOUD

ETC... !!

