

# FACE

RECOGNITION



# Face recognition

SAP Leonardo Machine Learning





# Who am I?

SAP Developer, Architect & Mentor

Specialized in UI5 & Fiori

Independent Consultant

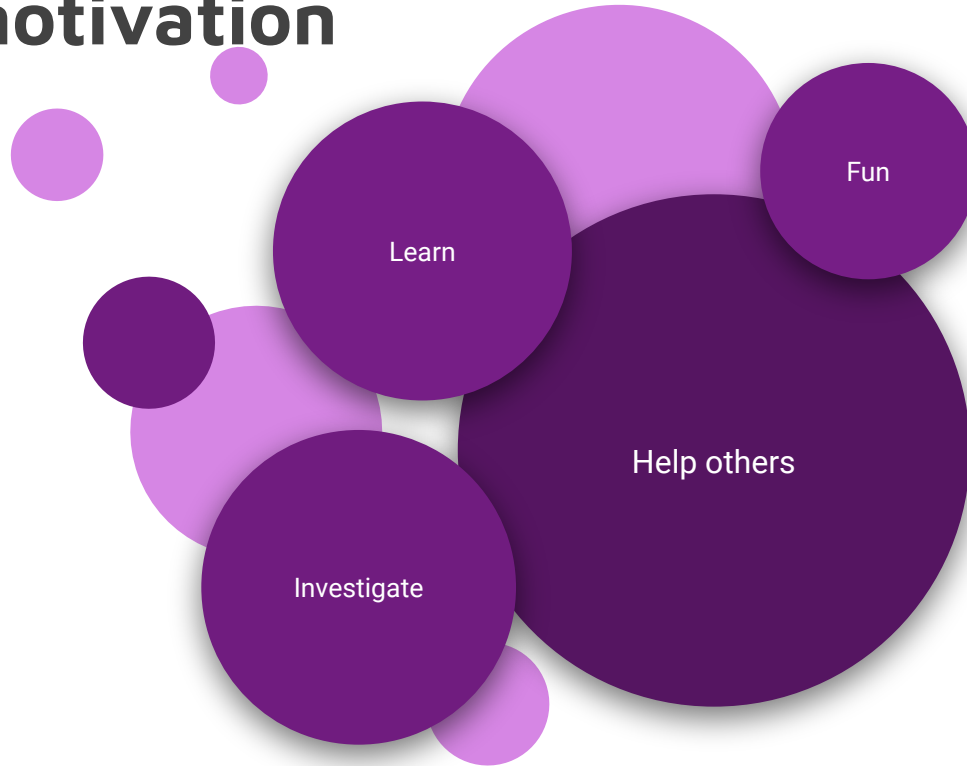


The background is a solid orange color. In the top right corner, there are three decorative elements: a small circle with a pie chart, a larger circle with a pie chart, and another small circle with a pie chart, all in varying shades of orange.

**What is your motivation?**



# My motivation





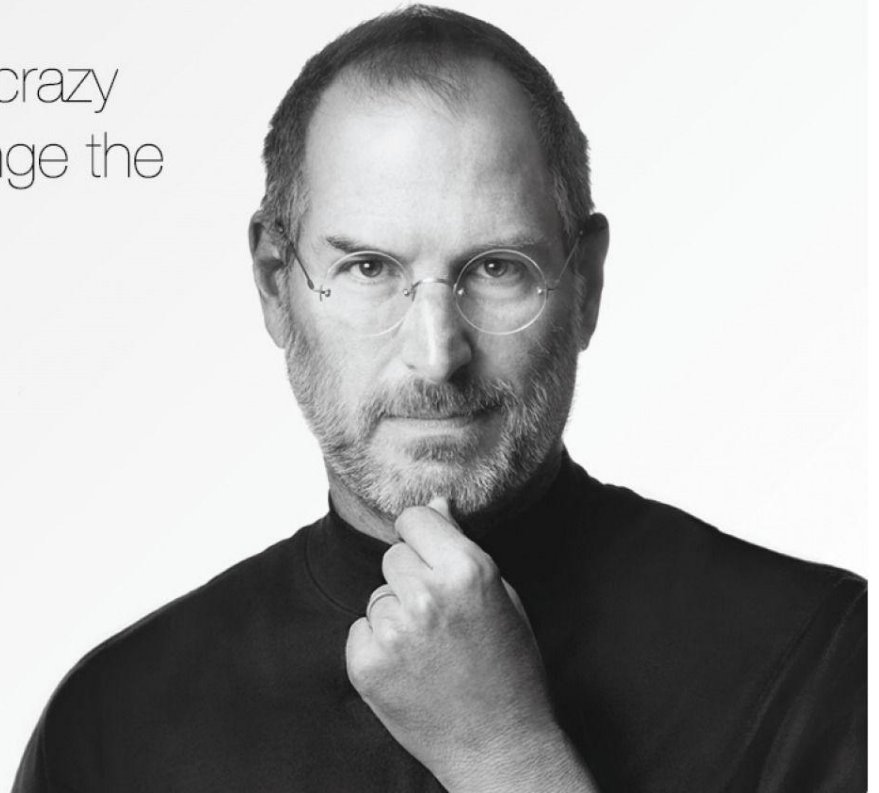
**We can change  
the world  
and make it a better  
place. It is in your hands  
to make a difference.**

**-Nelson Mandela**

Because the people who are crazy  
enough to think they can change the  
world are the ones who do.

Steve Jobs

1955-2011



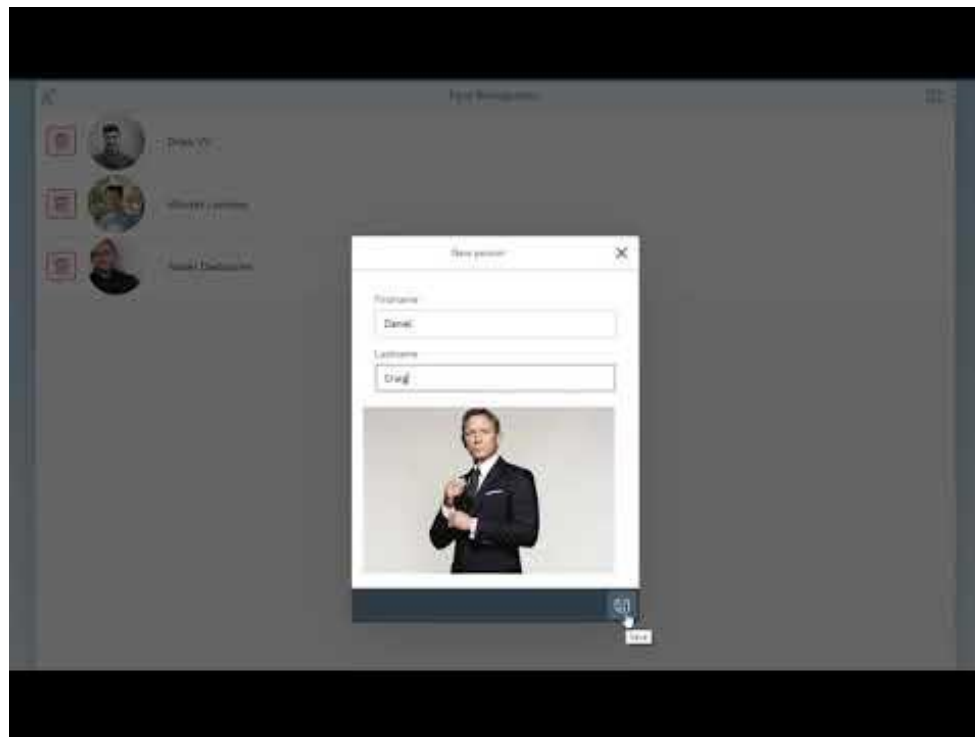


# Solution

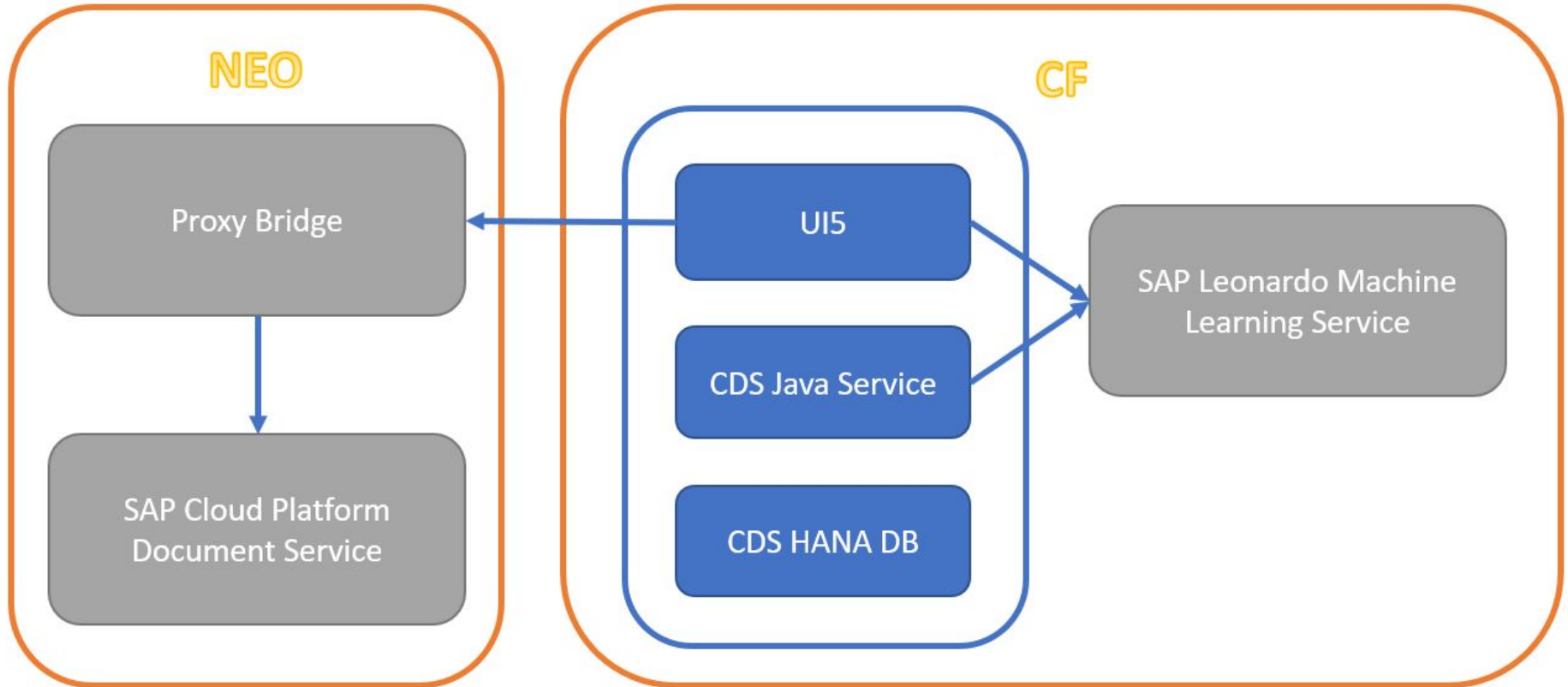




# Demo



# Architecture



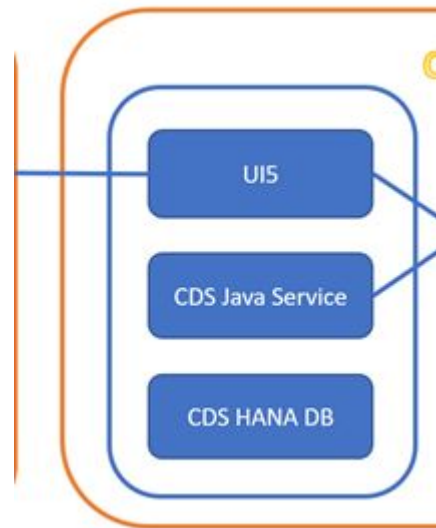


# The App

Technology:

- CAP
- Java
- Machine Learning SDK
- SAP Web IDE

Store and expose Perons





# Store images

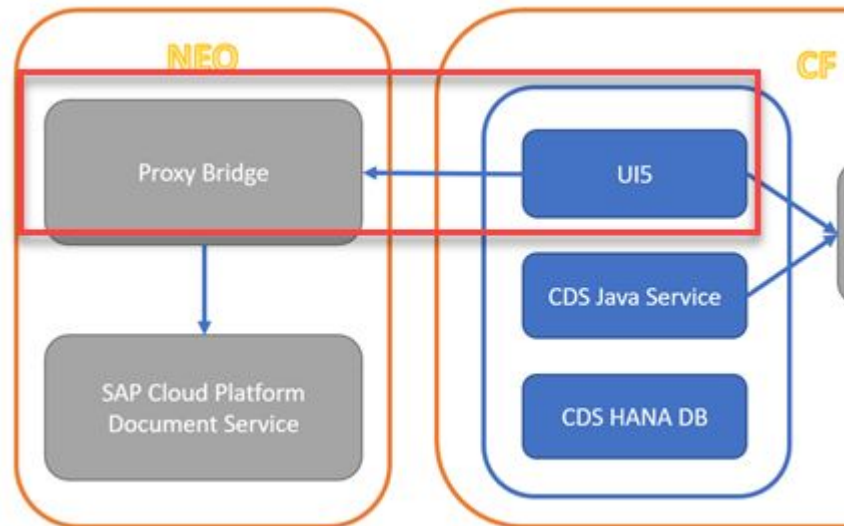
Technology:

- SCP Document Service
- Java Proxy Bridge (NEO)

Store image of a person

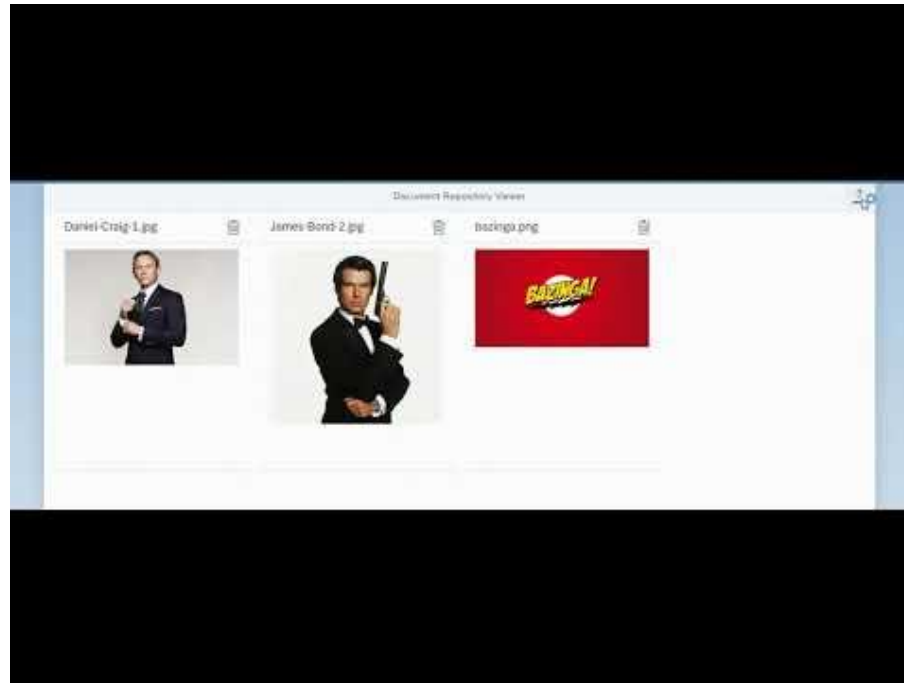
Example: Document Repository Viewer

<https://github.com/lemaiwo/DocumentRepositoryViewer>





# Document Repository Viewer





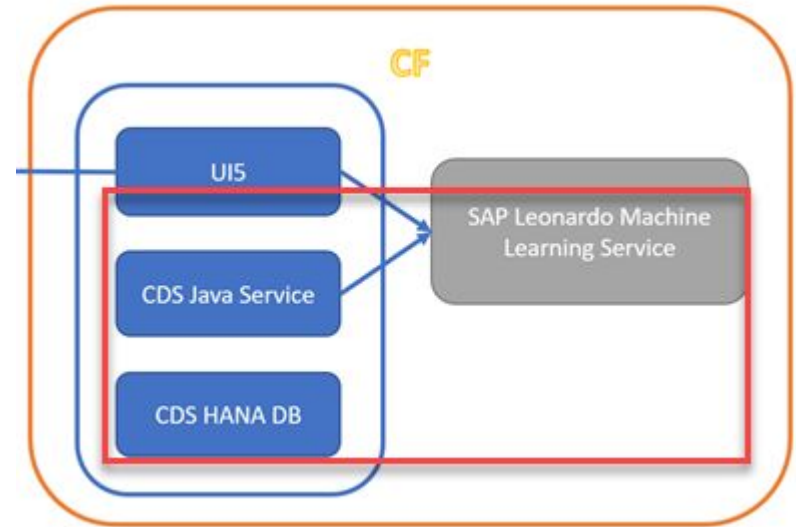
# SAP Leonardo Machine Learning

Used in:

- UI
- Java Service

Used for:

- Finding a face on an image
- Search for similar faces on other images





⇒ Find face in image and convert it to vector

⇒ Converts image to vector

⇒ Compares vector (faces)

```
"SCENE_TEXT_RECOGNITION_URL": "https://mlfprod
"IMAGE_RETRAIN_API_URL": "https://mlfprod
"IMAGE_FEATURE_EXTRACTION_API_URL": "https://mlfprod
"TEXT_LINEAR_RETRAIN_API_URL": "https://mlfprod
"HIERARCHY_MATCHING_DM_URL": "https://mlfprod
"IMAGE_OCR_URL": "https://mlfprod
"NATURAL_LANGUAGE_PROCESSING_URL": "https://mlfprod
"SIMILARITY_SCORING_URL": "https://mlfprod
"SPEECH_TO_TEXT_API_URL": "https://mlfprod
"HIERARCHY_MATCHING_INFERENCE_URL": "https://mlfprod
"IMAGE_CLASSIFICATION_URL": "https://mlfprod
"RESOURCEPLAN_API_URL": "https://mlfprod
"DEPLOYMENT_API_URL": "https://mlfprod
"NN_SEARCH_RETRAIN_API_URL": "https://mlfprod
"DOCUMENT_CLASSIFICATION_URL": "https://mlfprod
"TRANSLATION_URL": "https://mlfprod
"TEXT_CLASSIFIER_URL": "https://mlfprod
"TOPIC_DETECTION_URL": "https://mlfprod
"NN_SEARCH_URL": "https://mlfprod
"TEXT_TO_SPEECH_API_URL": "https://mlfprod
"HIERARCHY_MATCHING_MM_URL": "https://mlfprod
```

# Demo





# Recap Demo

1. Converted three images to vectors
2. Used one vector to search similar vector using other two vectors



# Conclusion

- SAP Leonardo Machine Learning
  - Not in trial account anymore (not free)
  - No model training required
  - No real Face Recognition
- Java was not the best choice ⇒ Slow to run in SAP Web IDE
- Document Service ⇒ Documentation hard to find
- CAP is great!



# What's next?

Bigfix on Safari iOS

Handle documents by CAP (not UI)

Update version CAP

Switch to NodeJS

Use camera on mobile (instead of file upload)



# References

Blog: <https://blogs.sap.com/2019/10/03/the-road-to-the-face-recognition-app/>

Face Recognition App: <https://github.com/lemaiwo/FaceRecognition>

ML App Example: <https://github.com/lemaiwo/MyCAPMAppWithML>

Document Repository Viewer: <https://github.com/lemaiwo/DocumentRepositoryViewer>



**Thank You!**

