



# Open-Facetracker

*Facial detection and recognition*

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# Summary

1. Facial recognition
2. OpenFacetracker: the project
3. Convolutional Neural Networks
4. Detection function
5. Recognition function





# Facial recognition

- ◇ Facial recognition is a hot topic these days:
  - it has made a lot a progress
  - it opens up a lot of opportunities
  - it raises a lot of questions
  
- ◇ One most important question :  
the storage of personal data



# OpenFacetracker: the project

## ◇ 3 main axes :

- 1) The research, study and improvement of face recognition techniques
- 2) The creation of a facial recognition software and development of use-cases
- 3) The reflection on ethical questions surrounding facial recognition and the raising of people awareness.



OpenFacetracker



# OpenFacetracker: the project

- ◇ Examples of use cases :
  - Complement for security systems
  - Count people entering a monument
  - Domotic events trigger
  - Automatic taking of class attendance



OpenFacetracker

# OpenFacetracker: the project

Project start

• 2014

Creation of  
the library  
and of the  
API

• 2016

Beginning of  
Akil

• February 2017

Creation of  
OFT program

• 2015

Beginning of  
research on  
CNN

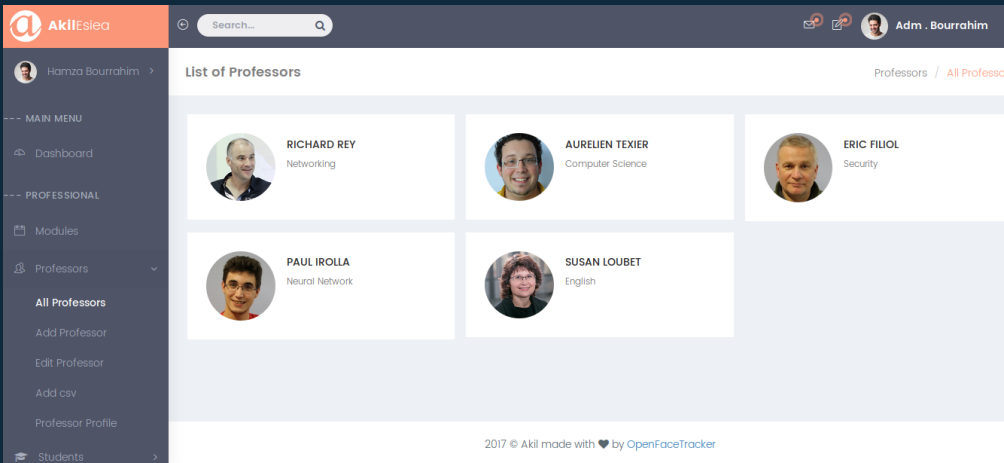
• October 2016

OpenFacetracker



# OpenFacetracker: the project

 Akil



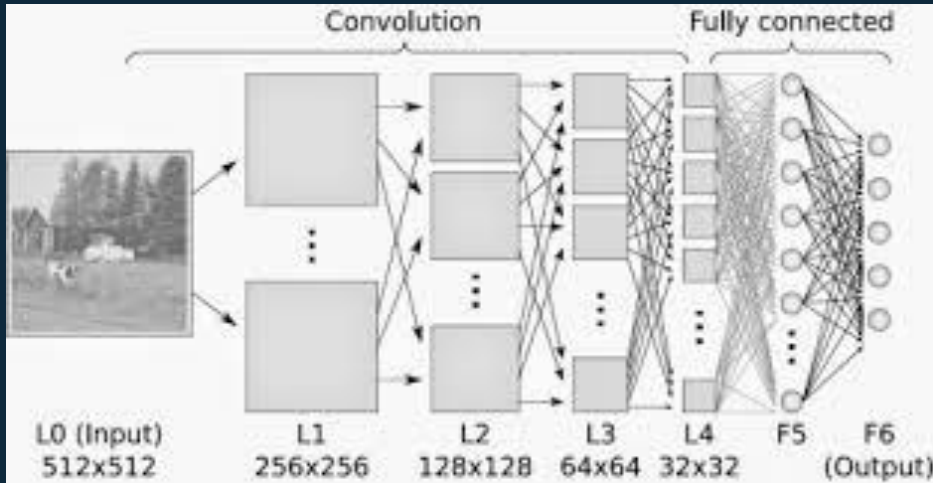
The screenshot displays the Akil web application interface. The top navigation bar includes the Akil logo, a search bar, and a user profile for Adm. Bourrahim. The left sidebar contains a main menu with options like Dashboard, Modules, Professors, and Students. The main content area shows a 'List of Professors' page with five professor profiles:

Name	Field
RICHARD REY	Networking
AURELIEN TEXIER	Computer Science
ERIC FILIOL	Security
PAUL IROLLA	Neural Network
SUSAN LOUBET	English

At the bottom of the page, it states: 2017 © Akil made with ❤️ by OpenFaceTracker

 OpenFaceTracker

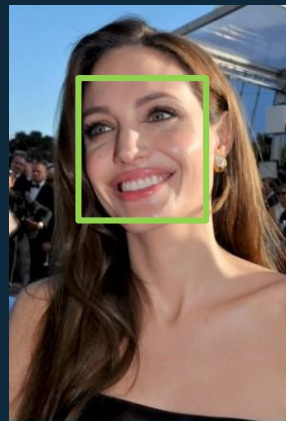
# Convolutional neural networks





# Detection function

◇ Is there a face ? If yes, how many ? And where ?



Open Facetracker



# Detection function

- ◇ Cut image into small icons by sliding a window filter



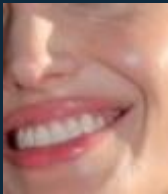
-> Feed all these icons to the neural network

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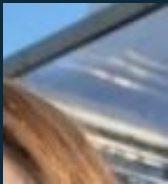


# Detection function

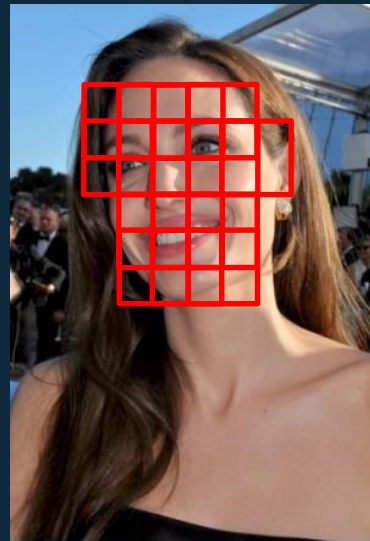
◇ Get positive results



<- face



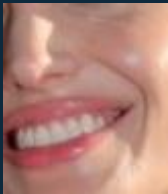
<- non face



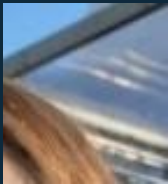
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# Detection function

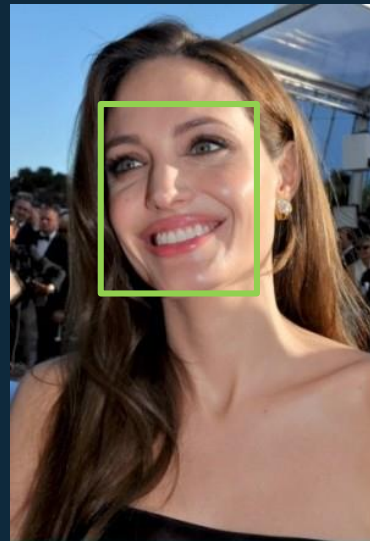
◇ Get positive results



<- face



<- non face



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# Recognition function

Do I know you?



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# Recognition function

◇ Let's check !!!



# Recognition function

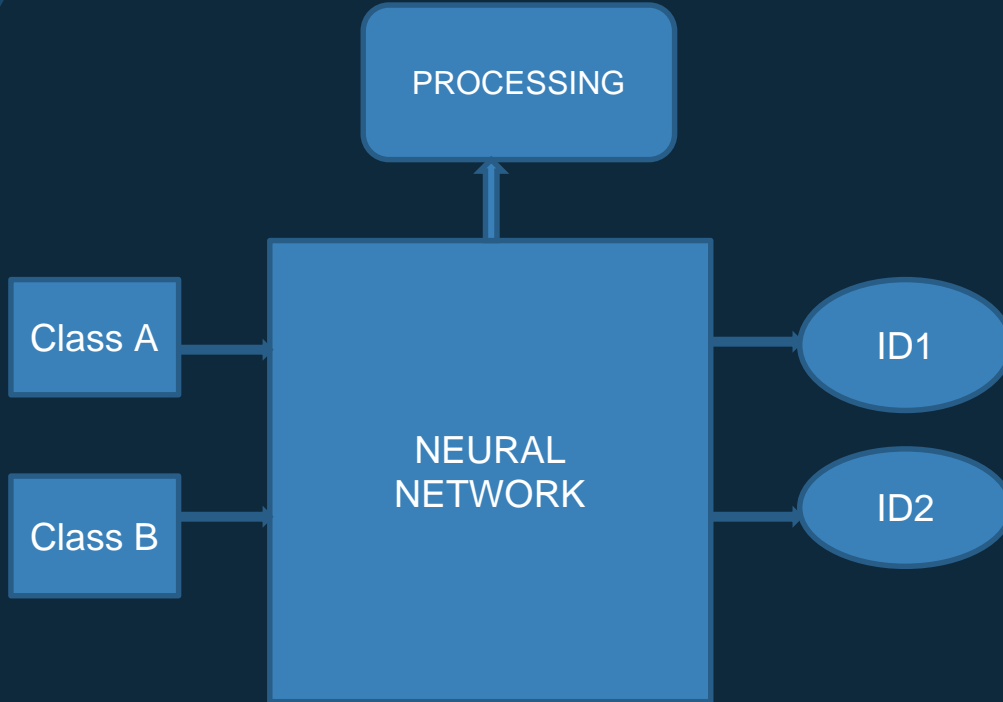
CLASS A



CLASS B



# Recognition function







# Conclusion

- ◇ We worked on improving the performance of our facial detection and recognition program by adding a new technique.
- ◇ Convolutional Neural Network work for both detection and recognition.



Thank you  
for your  
attention !

Any questions ?

