CS50 Seminar: ML & CV

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Intro

ML == Machine Learning
ML != impossible to learn
ML == really cool

CV == Computer Vision
CV != impossible to learn
CV == really cool

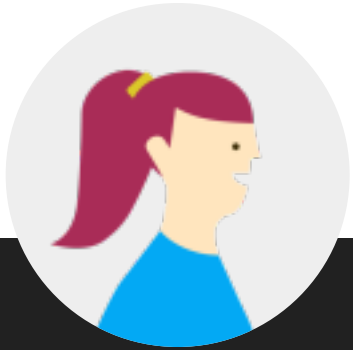# Some Context

What are we looking for?

—

In brief, patterns

What are we looking at?

—
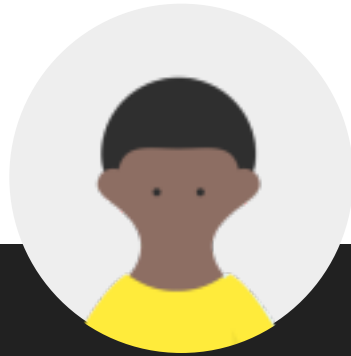
In brief, triplets of numbers, RGB
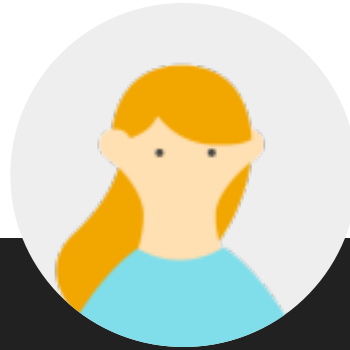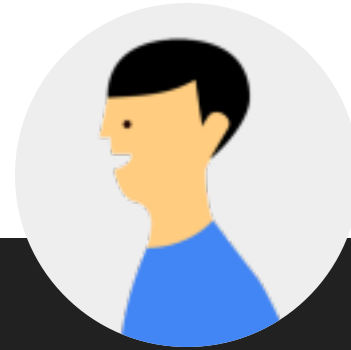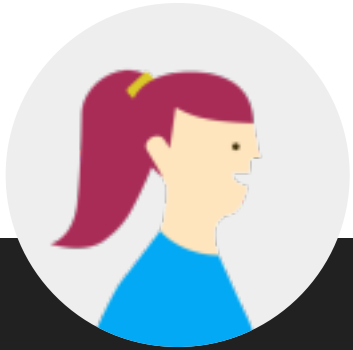
Pattern Recognition

Person 1

Person 2

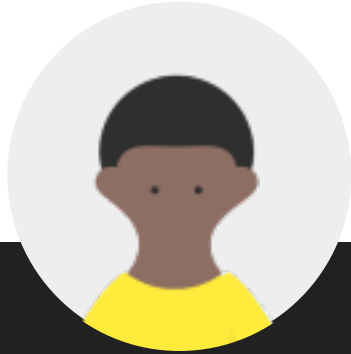Person 3

Person 4

Pattern Recognition
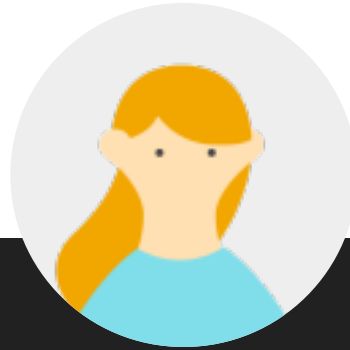

Person 1

One eye

Human

Ponytail

Person 2

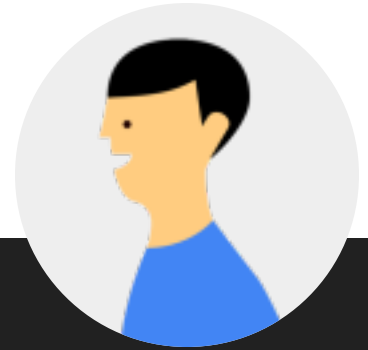Two eyes

Human

No Ponytail

Person 3

Two eyes

Human

No Ponytail

Person 4

One Eye

Human

No Ponytail

Conflict

How do we deal with this lack of data?

Solution

Collect more data?

Solution

Collect more data...maybe

But also:

Data augmentation

Clever data gathering

Automated data gathering

Beefier models

Machine learning takes a long time, right?

Computer vision is a perfect representation of visual data, right?

Why choose this software?

Keras:

Open source

Provides high-level interface

Still does its job

OpenCV

Open source

Provides high-level interface

Still does its job

Why choose this software?

Keras:

OpenCV

They are accessible, even to us, the beginning programmers

The Slides and The Code

These slides:

https://drive.google.com/open?id=1PDqS97VfAH27IQyIE7Nmk29ON6jJDmj-ZbRNwOAWudA → http://bit.ly/2y6KSuF

Github:

https://github.com/powerhouseofthecell/machine_feeling → http://bit.ly/2zRSmPz

Thank you very much!

Enjoy!