

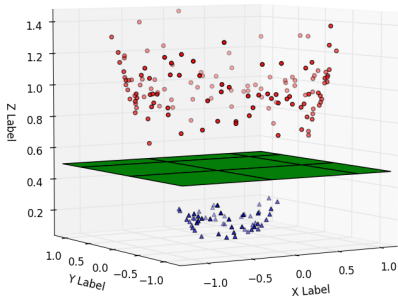
Image Recognition

Kick-off

T8 - AI & Big Data

T-DEV-810

Machine learning



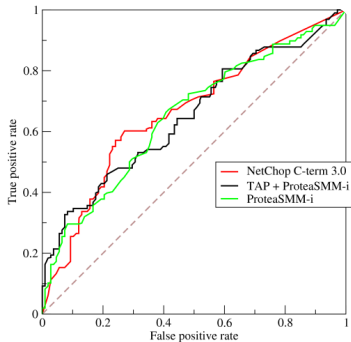
Learn from data instead of stating explicit rules.

Find regularities in samples to classify, display, make suggestions or decisions, ...

Many applications: finance, health, language processing, robotics, games...



Supervised classification



Cluster information between classes.

Assume regularity $Y=F(X)$, where Y is the class (ex. figure) and X various parameters (ex. colors).

Try to build an **estimator of F** based on sample data.



Image recognition



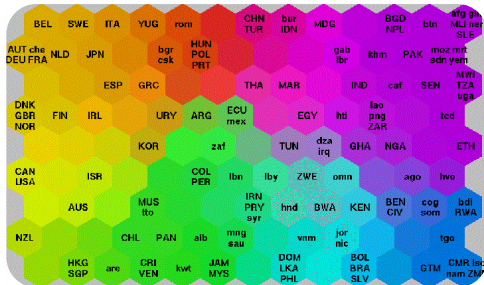
Data = bunch of pixels.
Associate pixels with a label.

Start with tagged pictures. **Emulate rules.**
Then, **apply rules on unlabeled pictures.**

You may rebuild missing data or
retrieve compressed file.



Visualization



Frequent usage of **ML** for decision-making.

Starting with multi-dimensional ($n > 2$) data, produce a 2-dimensional visualization, without losing too much information.

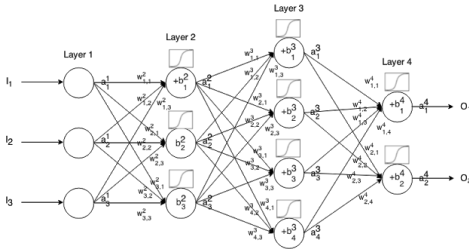


Dealing with big data

Quality & size of data impact algorithm's choice.

Neural Networks are not always the best option.

Learn to **select variables**, **control running time** and **assess quality** of solutions.



Back to the project



Given a sizeable amount of pictures from a medical bank:

- build **robust** algorithm, using **scarce resources**
- return **reliable predictions** to detect infected organs



Any questions

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