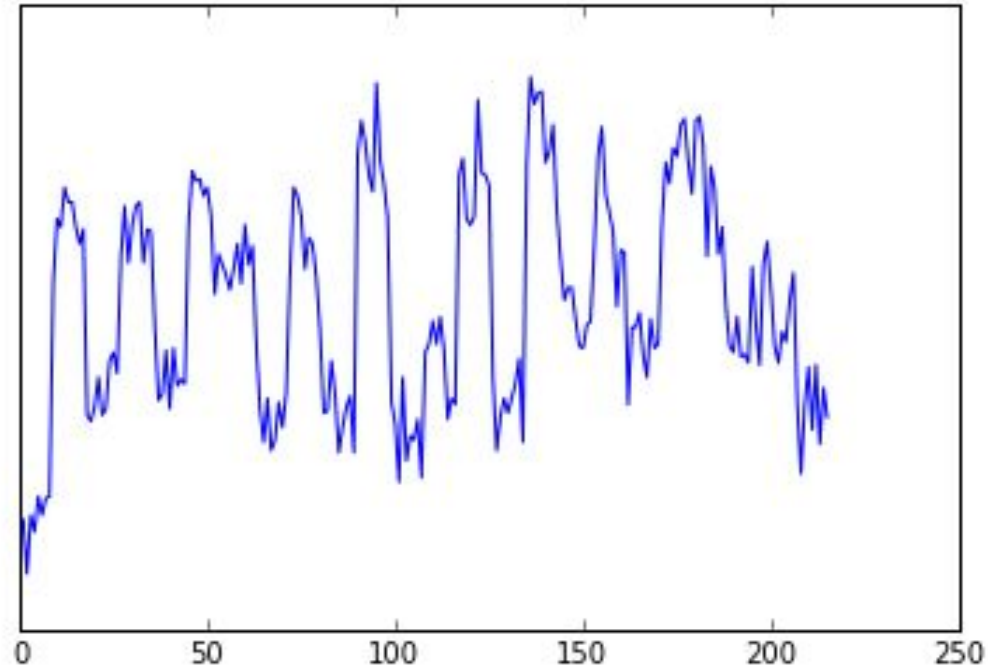


Classification

some intuitions

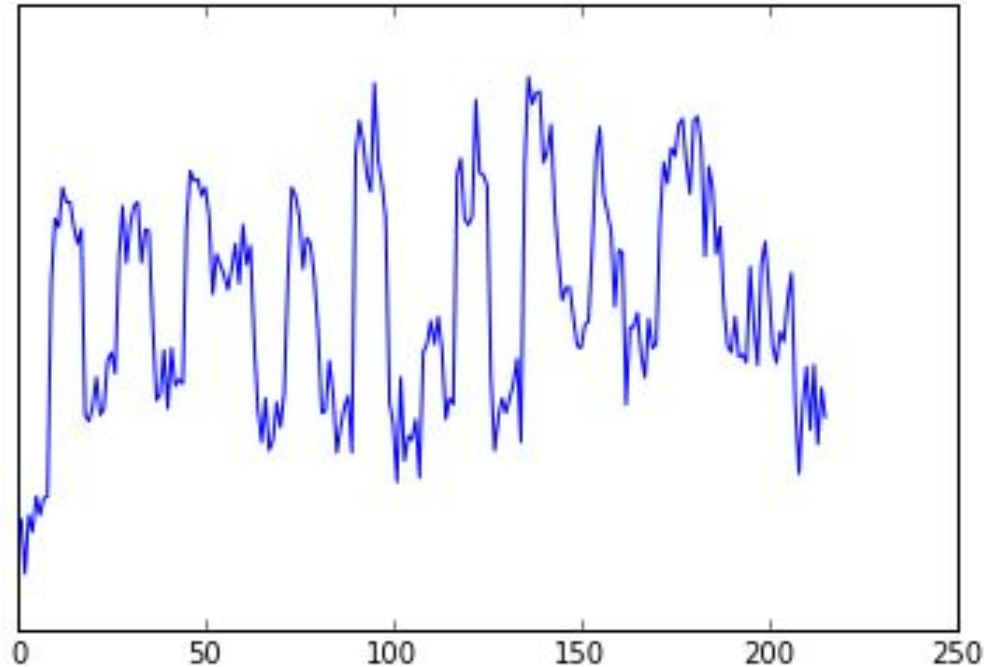
Classification in one dimension



Classification in one dimension

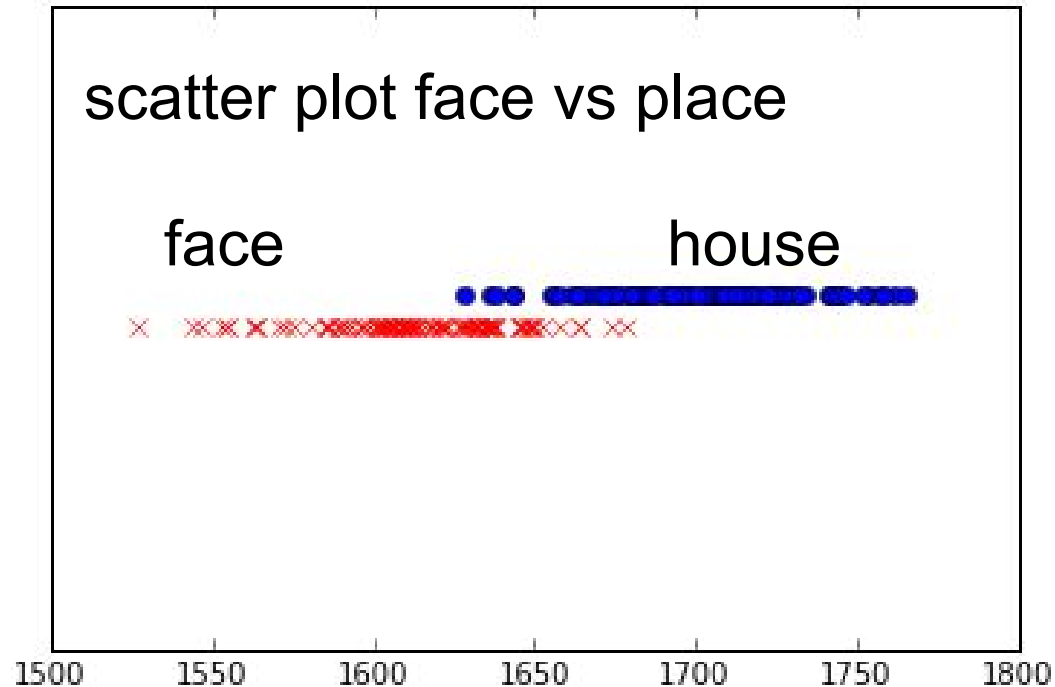
house

face



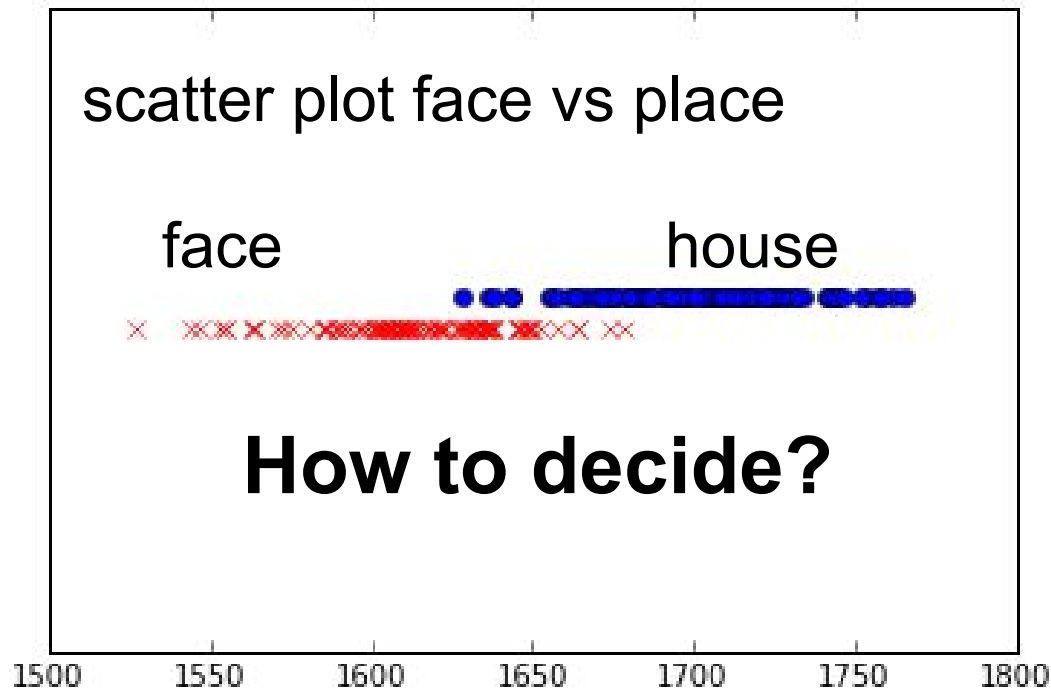
A voxel from the parahippocampal place area (PPA) while subject viewed faces or houses

Classification in one dimension



A voxel from the parahippocampal place area (PPA) while subject viewed faces or houses

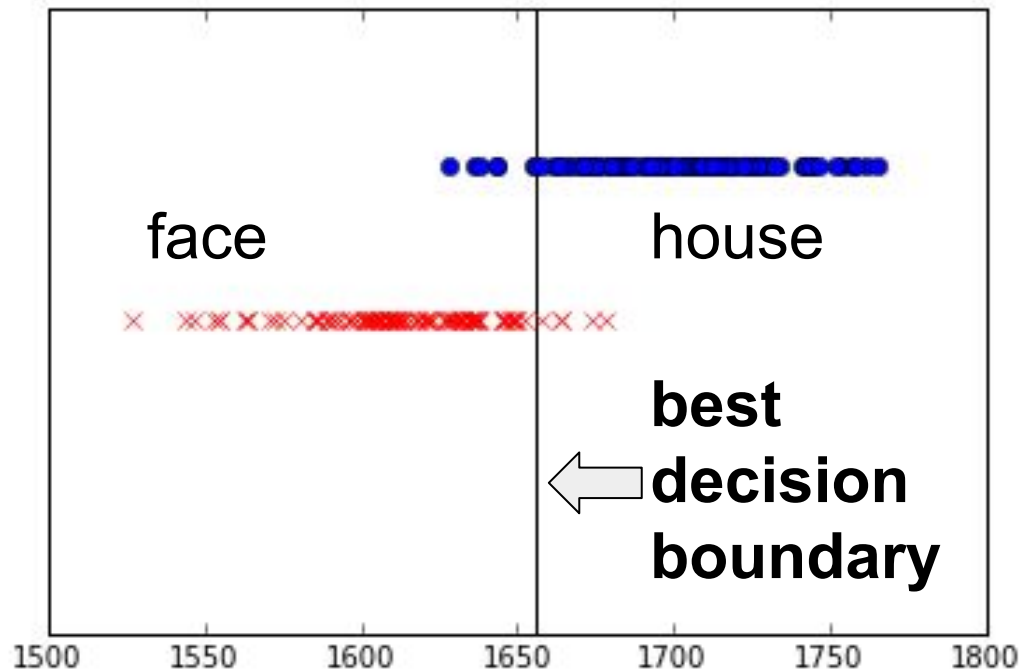
Classification in one dimension



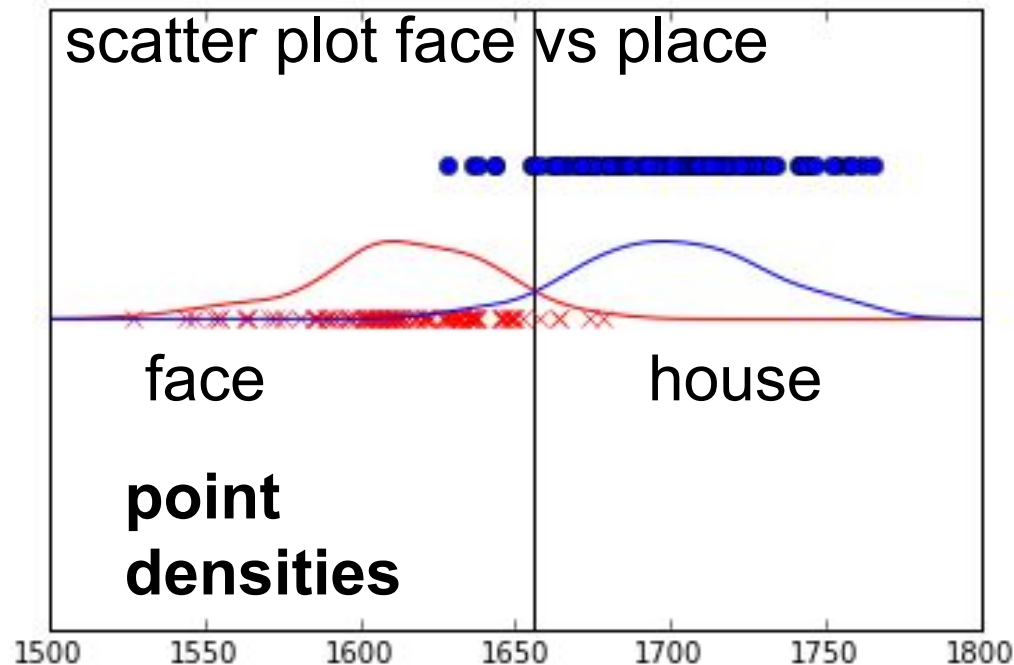
A voxel from the parahippocampal place area (PPA) while subject viewed faces or houses

Classification in one dimension

scatter plot face vs place

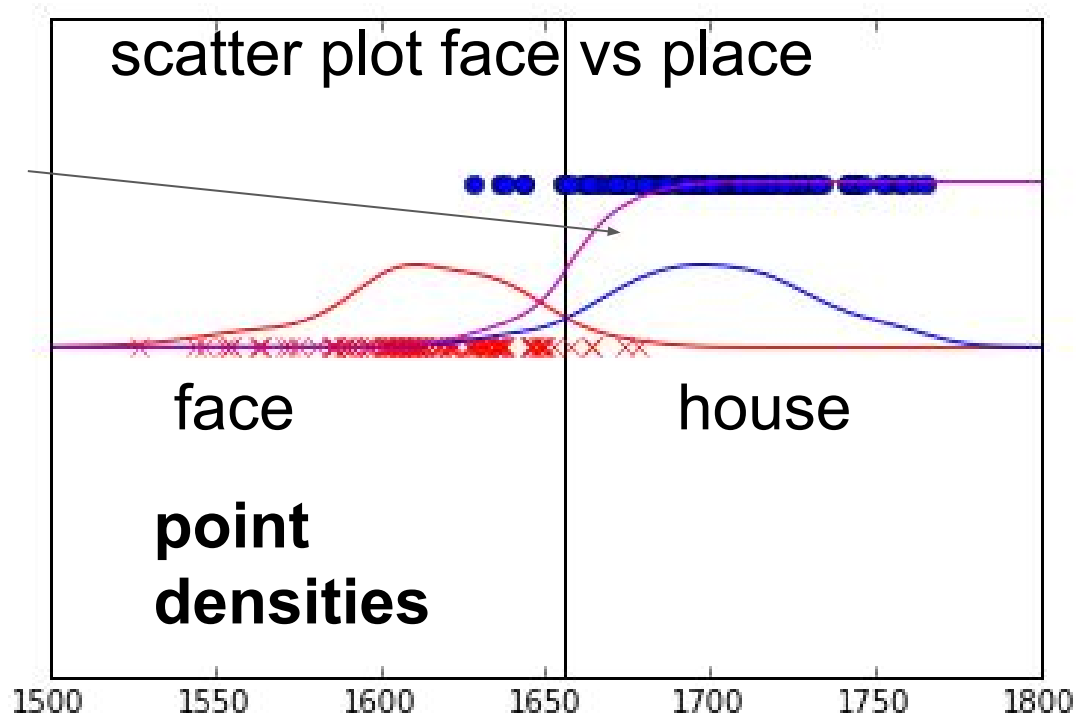


Classification in one dimension



Classification in one dimension

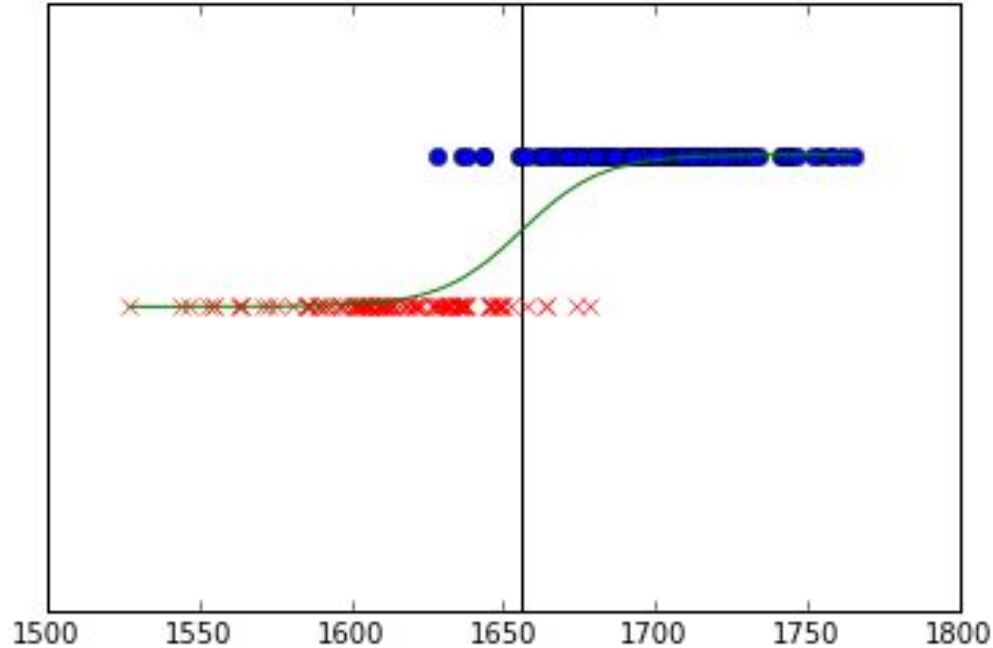
**probabilistic
decision
function**



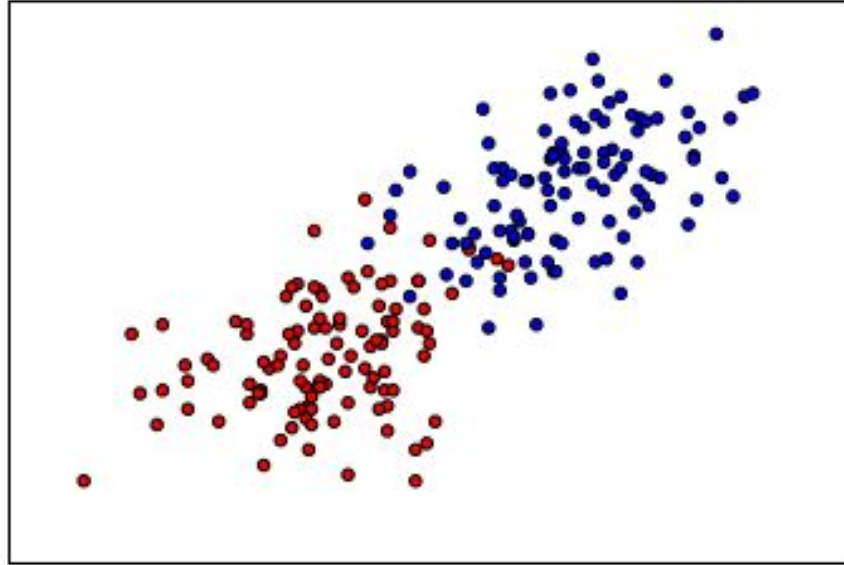
Classification in one dimension

**LOGISTIC
REGRESSION**

**probabilistic
decision
function**



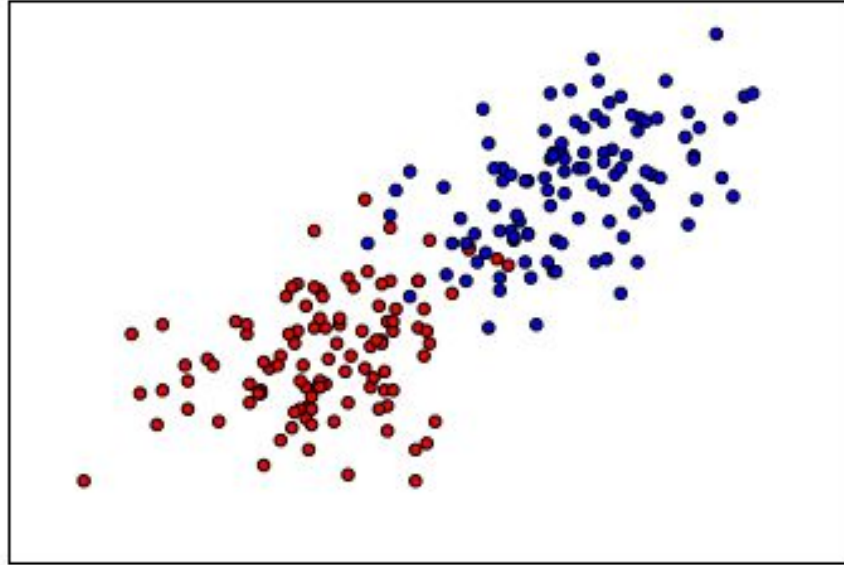
Classification in two dimensions



Two voxels from the parahippocampal place area (PPA) while subject viewed faces or houses

Classification in two dimensions

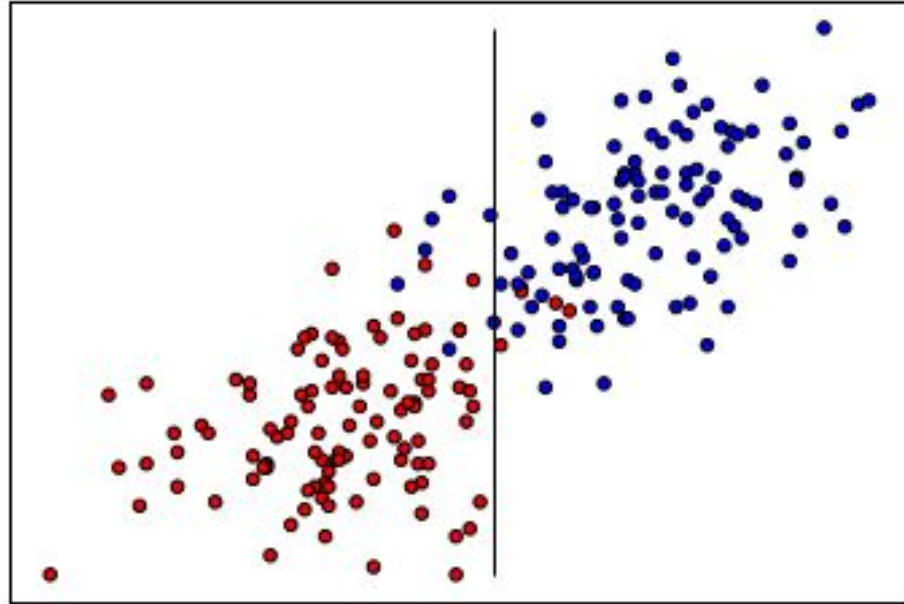
How to decide now?



Two voxels from the parahippocampal place area (PPA) while subject viewed faces or houses

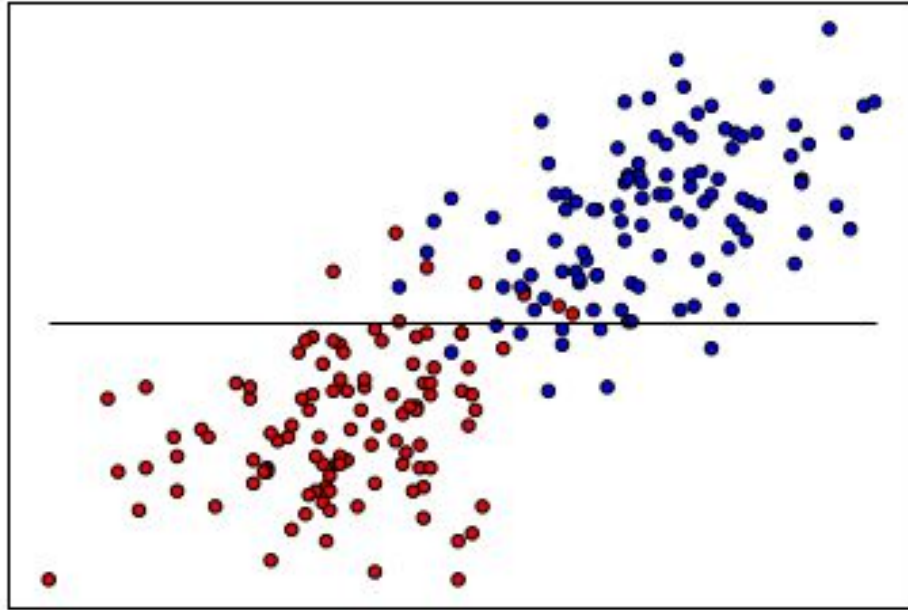
Classification in two dimensions

**Decision
along
voxel 1**



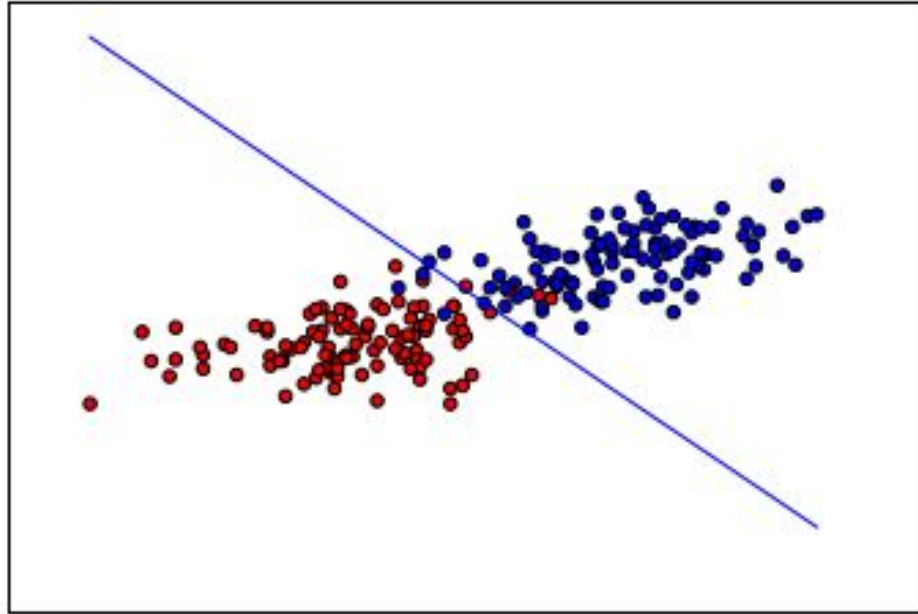
Classification in two dimensions

**Decision
along
voxel 2**



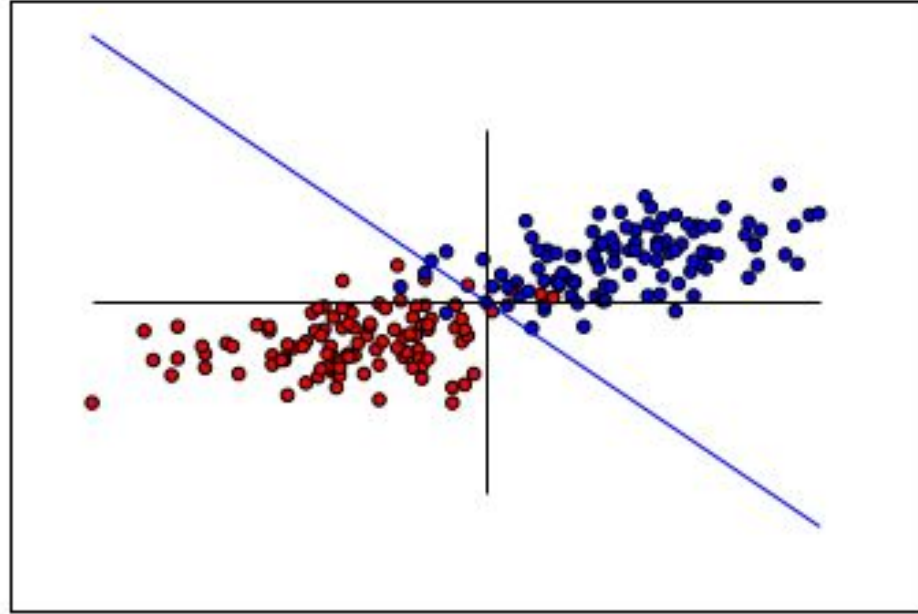
Classification in two dimensions

**Multivariate
decision
(logistic
regression)**



Classification in two dimensions

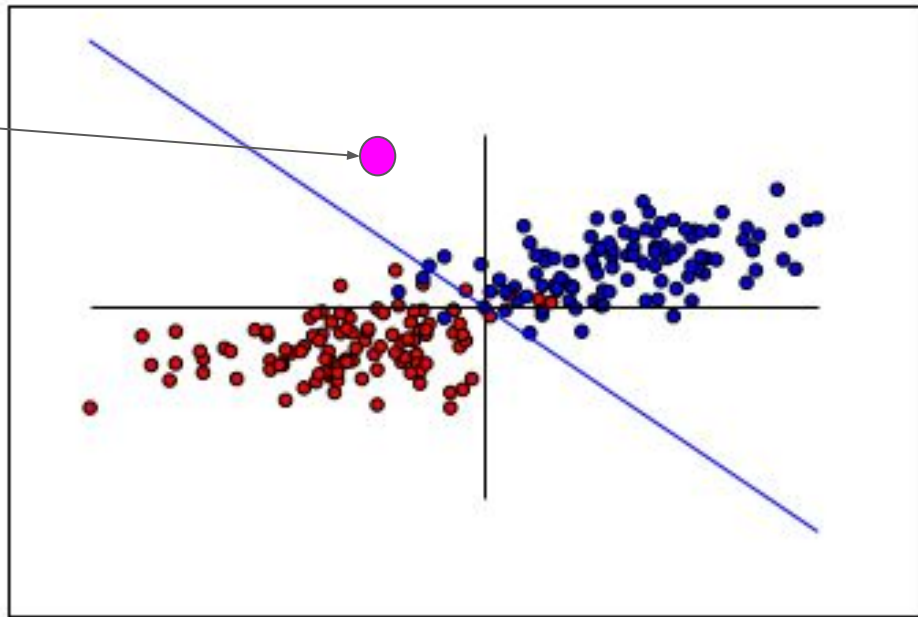
**So, which
one to use?**



Classification in two dimensions

**Decide
about a new
point**

Where does it go?



Conclusion

- Classification is taking decisions based on numerical data
- Different ways of classification will take different decisions!
- You have to choose which classifier to use, they all have advantages and disadvantages
- **nilearn** and **scikit-learn** will help you!

Classifier tutorial

https://github.com/eickenberg/nilearn_workshop/classifier_tutorial.ipynb

How to obtain this?

In a terminal, do:

```
cd
mkdir notebooks
cd notebooks
git clone https://github.com/eickenberg/nilearn\_workshop/
cd nilearn_workshop
ipython notebook
```

or: Download the zip file, unzip it, go into the directory in a terminal and run
ipython notebook