



Introduction to machine learning and neural networks

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What we'll see...

- ▶ Day 1
 - 1. Introduction to machine learning and mathematical modelling
 - 2. Linear regression example
- ▶ Day 2
 - 1. Machine learning basics: train/test, supervised/unsupervised, classification/regression
 - 2. Bias-variance tradeoff
 - 3. Decision trees/random forests
 - 4. Cross validation

What we'll see...

- ▶ Day 3
 - 1. History of deep learning
 - 2. The perceptron
 - 3. Artificial neural networks
 - 4. How do we train a neural network?
- ▶ Day 4
 - 1. Convolutional neural networks for image processing

Practicals

- ▶ Jupyter notebooks → Python
- ▶ Introduction to NumPy: managing arrays and matrices
- ▶ Pandas, matplotlib and sci-kit learn
- ▶ Data processing in Python
- ▶ For deep learning: Keras
- ▶ Google colab



colab