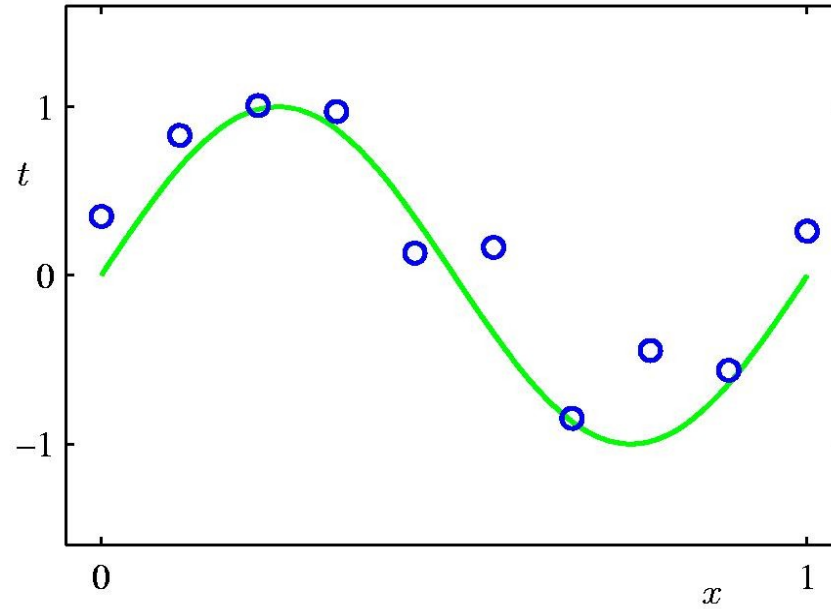
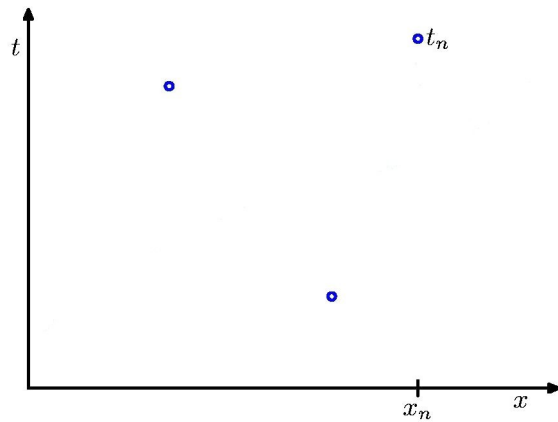
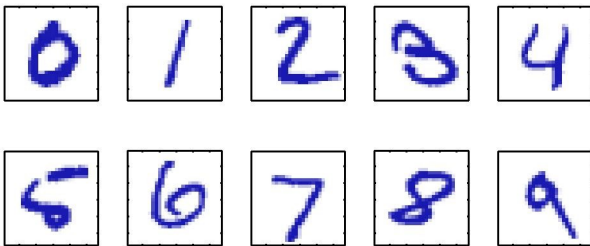


Machine Learning



Machine Learning: what is it?

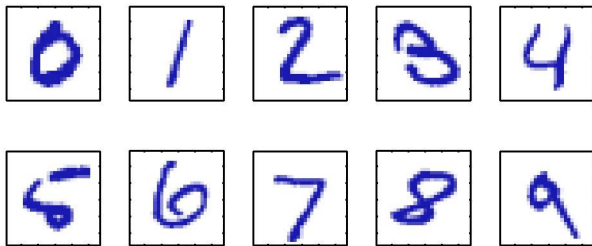
We have data



Machine Learning: what is it?

We want

We have data

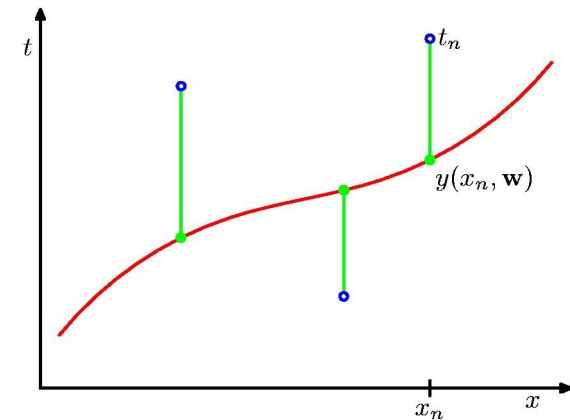
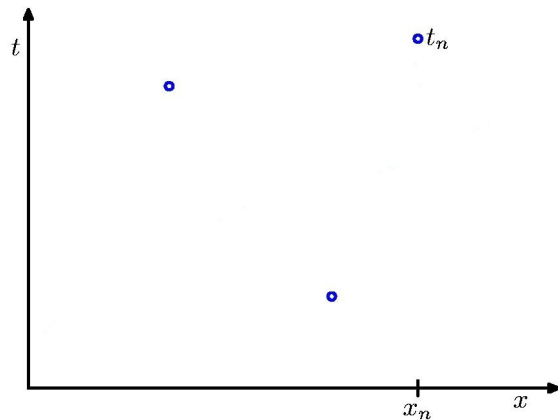


...a model

...a prediction

0 1 2 3 4
5 6 7 8 9

Classification



Regression

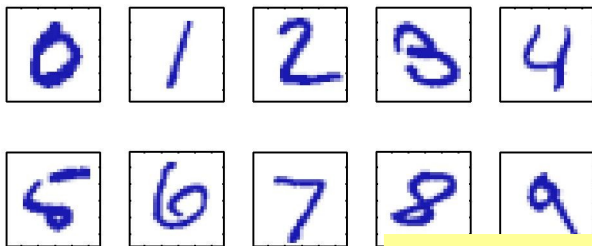
Machine Learning: what is it?

We want

We have data

...a model

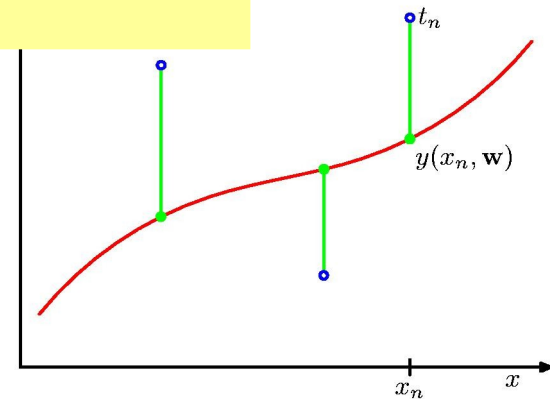
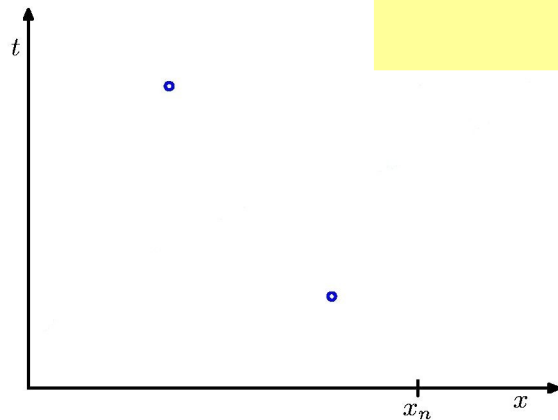
...a prediction



0 1 2 3 4
5 6 7 8 9



In machine learning we use **generic models** that we train from the data.



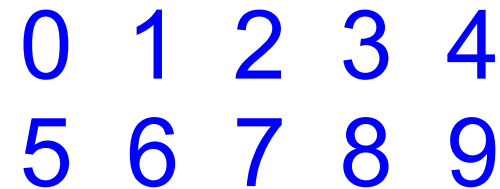
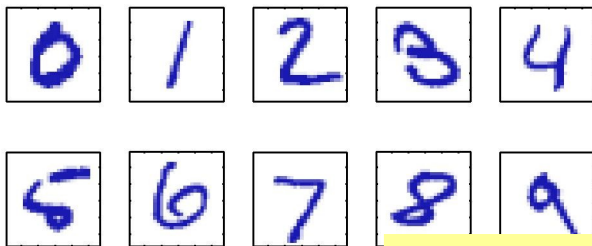
Machine Learning: what is it?

We want

We have data

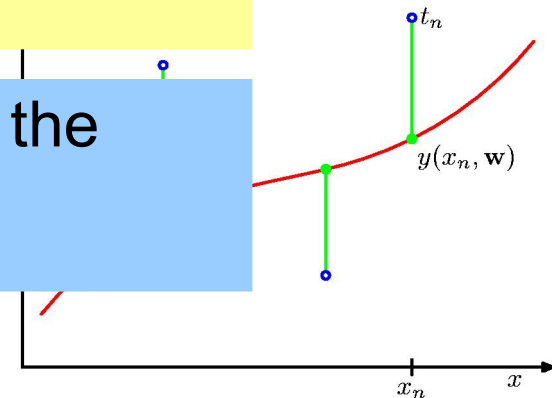
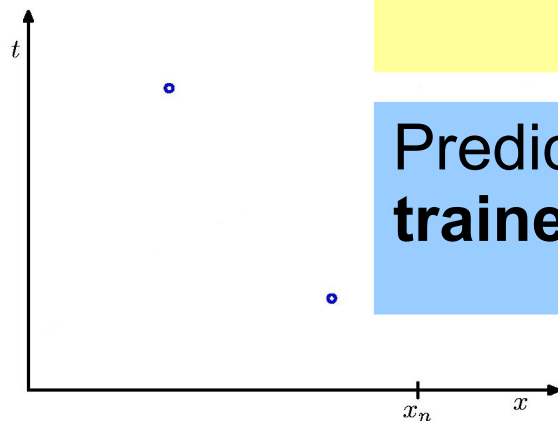
...a model

...a prediction



In machine learning we use **generic models** that we train from the data.

Prediction is achieved using the **trained models**.



Machine Learning

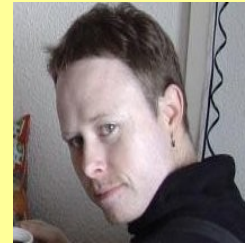
Lecturer

Thomas Mailund

Email: mailund@birc.au.dk

Office: 1090.115

Phone: 8942 3125



Christian Nørgaard Storm Pedersen

Email: cstorm@daimi.au.dk

Office: 1090.112

Phone: 8942 3121



Homepage

http://www.daimi.au.dk/~cstorm/courses/ML_f08/

Lectures

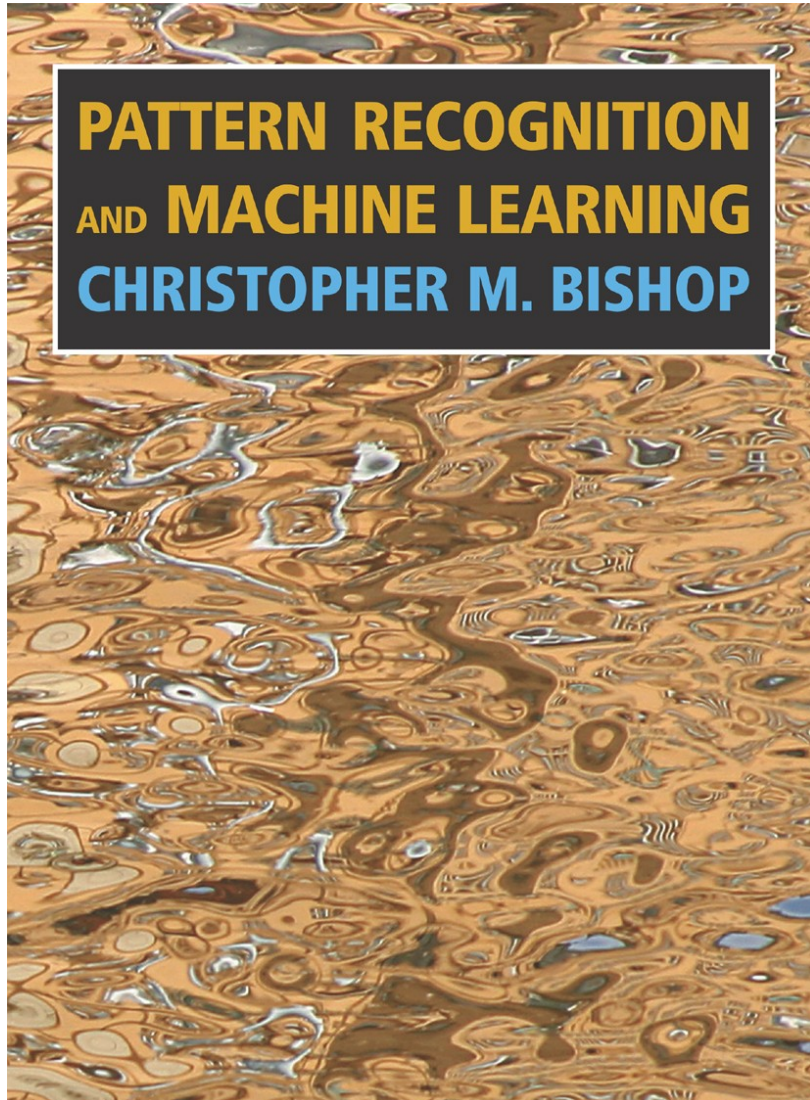
When and where

Mondays: 12:15-14:00, Shannon 159
Fridays: 12:15-13:00, Shannon 159

Weekly schedule

http://www.daimi.au.dk/~cstorm/courses/ML_f08/schedule.html

Literature



Christopher M. Bishop
**Pattern Recognition and
Machine Learning**

Spring 2006

Available at the GAD
bookstore. Additional material
will be available on the course
www pages

Mandatory Projects

There will be three mandatory projects

Linear Regression

Late April

Hidden Markov Models

Early May

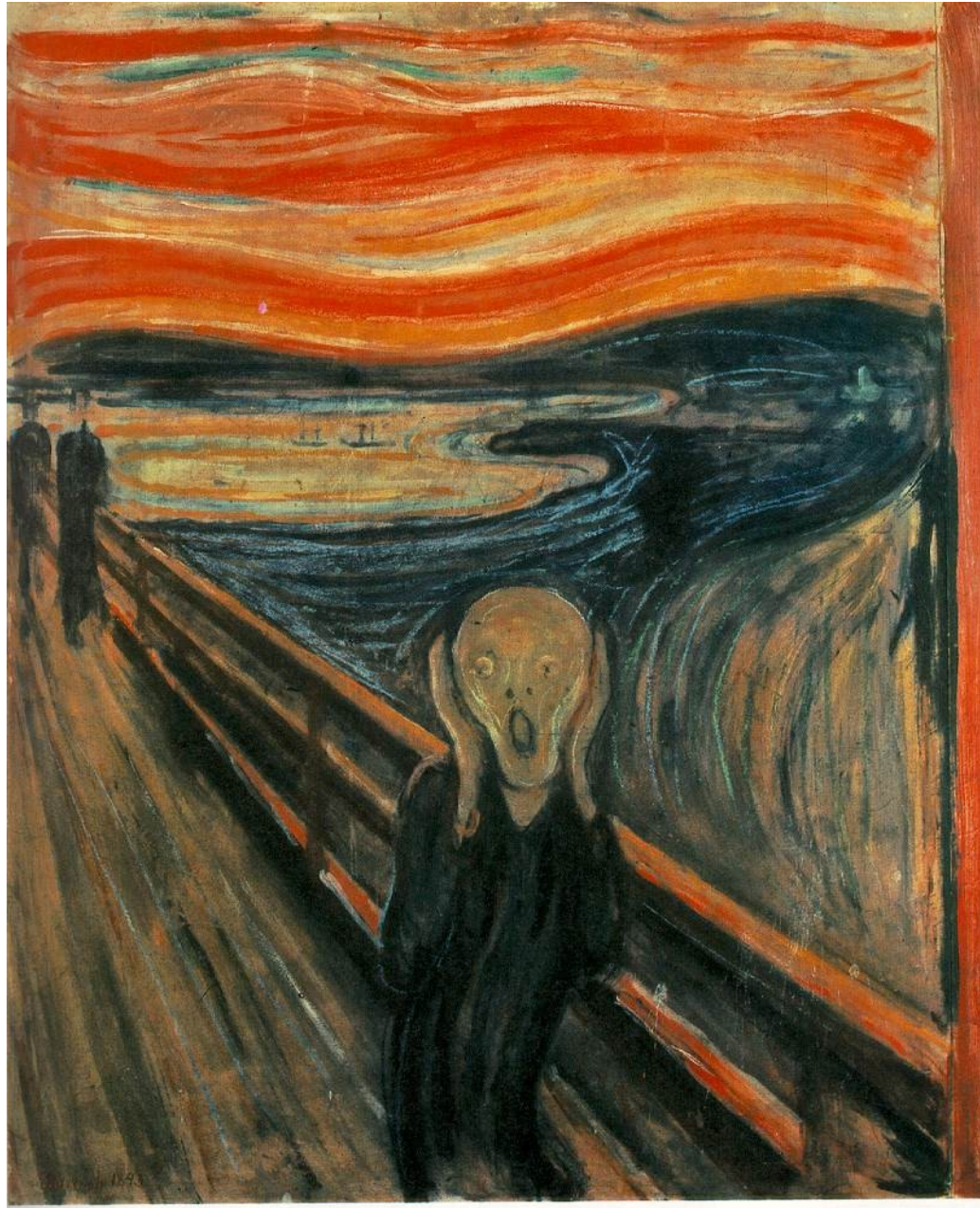
Neural Networks

Late May

Work in groups of 2-3 students

...implementation, training, experimenting...

Exam



Exam

Individual oral exam (20 min; no preparation)

4-6 questions based on theory from lectures

Presentation of mandatory projects and related theory

More info later...

Schedule

Week 1 Crash course in probability theory and statistics

Week 2 Linear regression and classification

Week 3 Hidden Markov models

Week 4 Hidden Markov models (cont.)

Week 5 Neural Networks

Week 6 Neural Networks (cont.)

Week 7 Bits'n'pieces

Evaluation of course and information about exam

Schedule

Week 1 Crash course in probability theory and statistics

Week 2 Linear regression and classification

Week 3 Hidden Markov models

Week 4 Hidden Markov models (cont.)

Week 5 Neural Networks

Week 6 Neural Networks (cont.)

Week 7 Bits'n'pieces

Evaluation of course and information about exam