TU-Delft Deep Learning course 2018-2019

00.Logistics

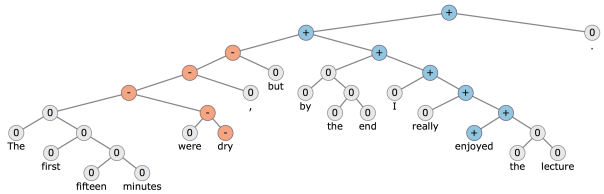
13 Feb 2019

Lecturer: Jan van Gemert

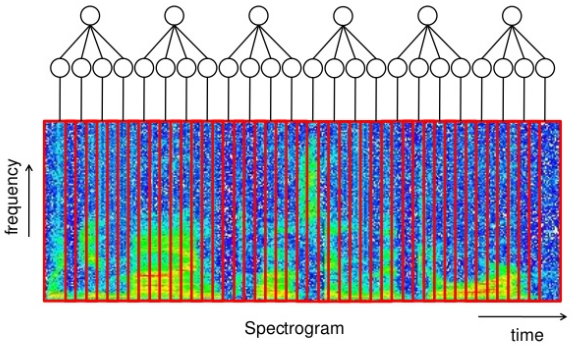
Why Deep Learning?

Image: Google Research Blog

Image



Text



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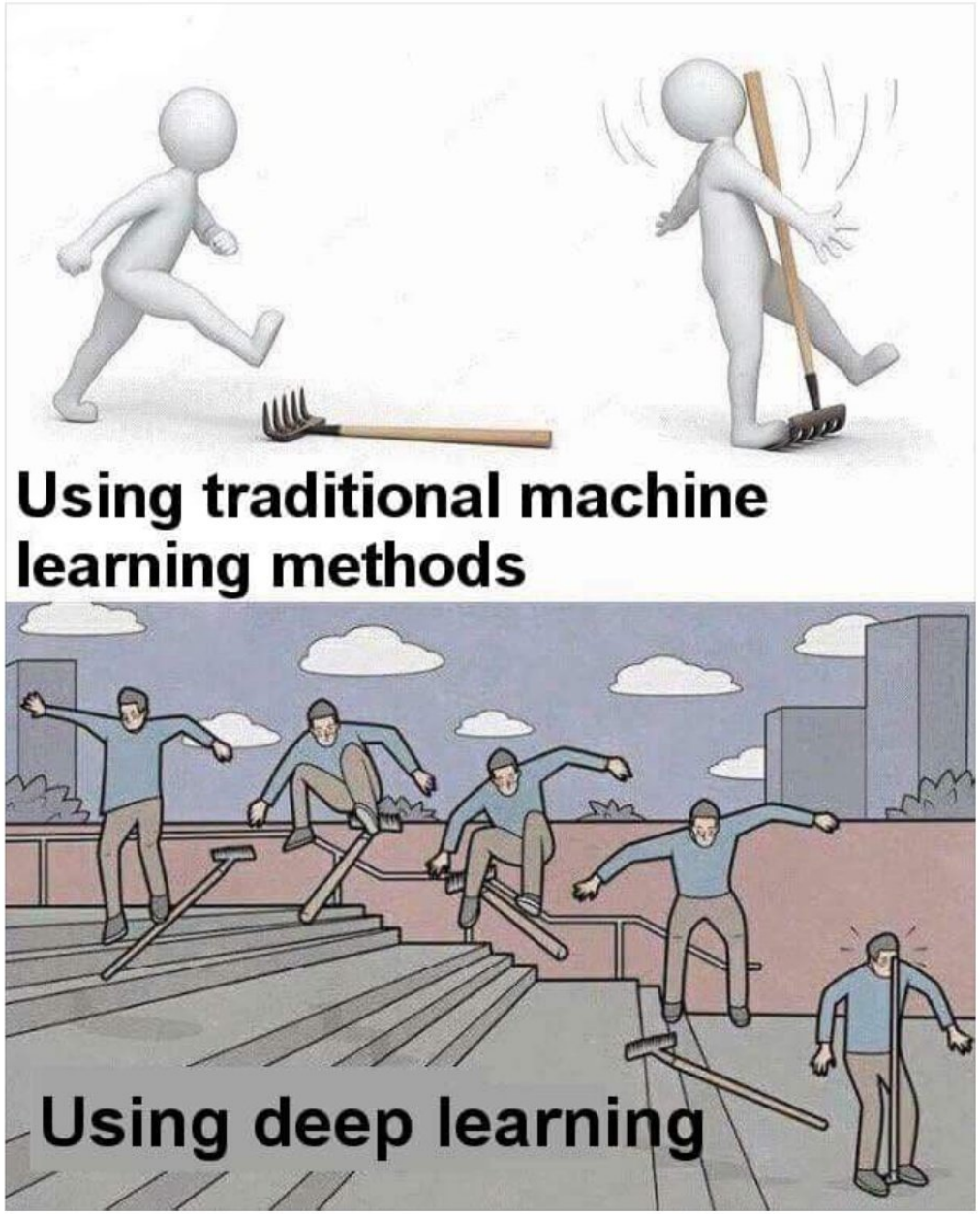
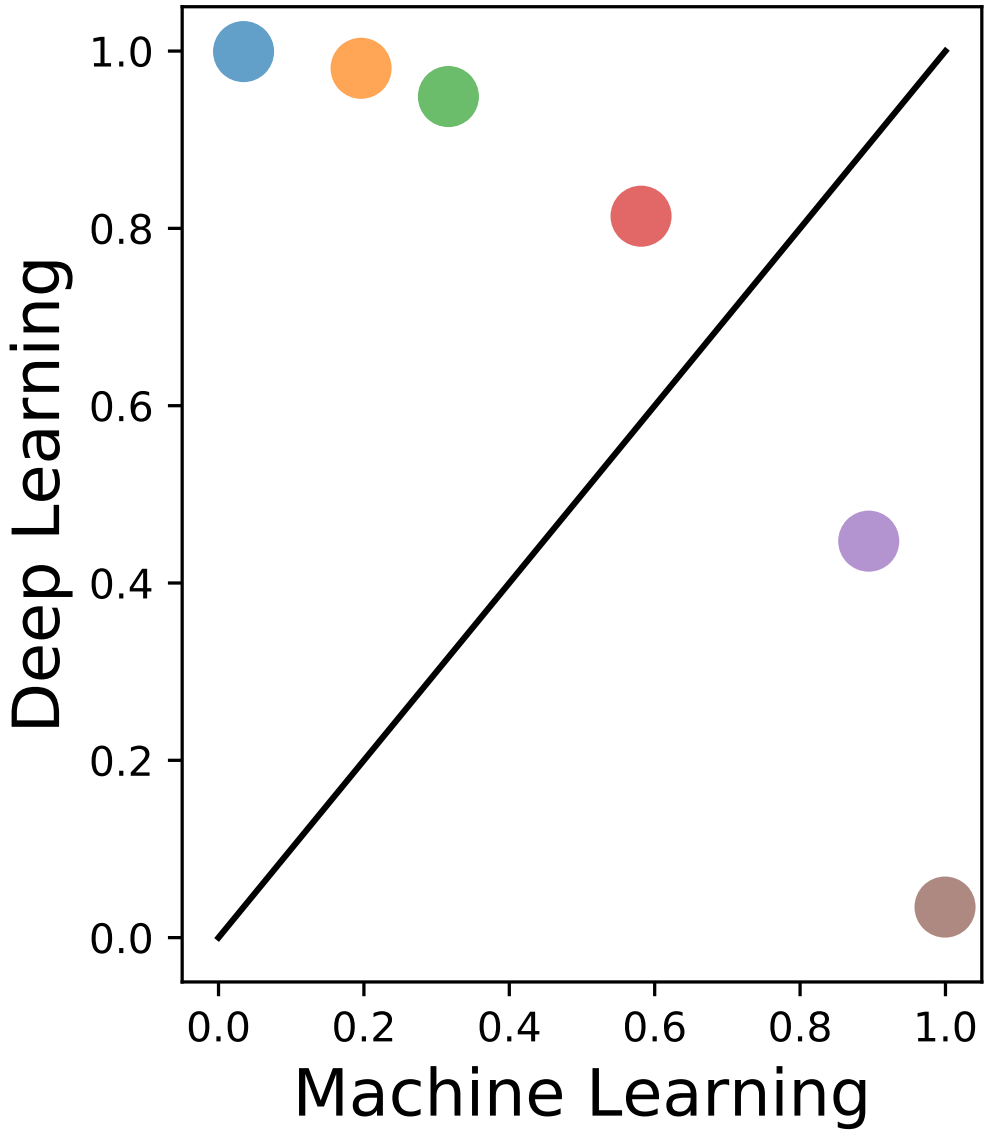
Speech

Go

Deep learning and Machine learning



Machine Learning vs Deep Learning

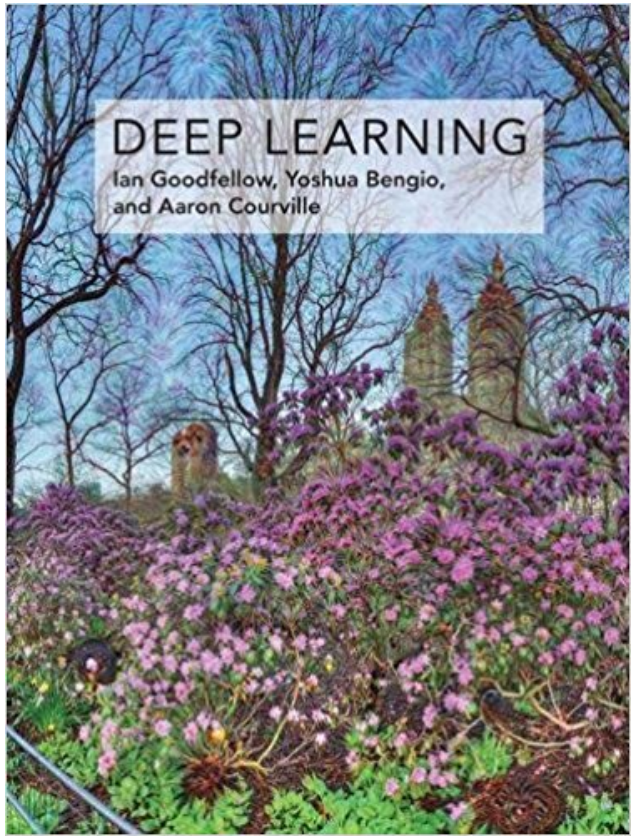


- Deep learning: coupled to the application
- Machine learning: application independent
- Lets discuss this slide again after the course

Topics and book

Book: "Deep Learning", Goodfellow et al.
Freely available online: http://www.deeplearningbook.org/

1. Intro and feed forward (Ch.: 4, 6, 12)
2. Refresh and backprop (Ch.: 2, 3, 4, 6)
3. CNNs (Ch.: 9)
4. Optimization (Ch.: 4, 8)
5. Regularization (Ch.: 5, 7)
6. RNNs (Ch.: 10)
7. Unsupervised (Ch.: 14, 20)



Deep learning course team

- Lecturers
  - Jan van Gemert
  - David Tax
- PhD candidates
  - Osman Kayhan
  - Yunqiang Li
  - Yeshwanth Napolean
  - Ziqi Wang
- TAs
  - Kanav Anand
  - Dhruv Batheja
  - Husain Kapadia
  - Chinmay Pathak
  - Chia-Lun Yeh

Whoami: Jan van Gemert

- BSc Computer Science @ Fontys
- MSc Artificial Intelligence @ UvA
- Internship Mitsubishi Research Lab, @ Boston, USA
- PhD Computer Vision @ UvA
- Postdoc @ ENS, Paris & @ UvA
- Head Computer Vision lab @ TUD

Research topics: Adding knowledge priors to deep learning.

How to communicate with us

- Do not email us personally
- Use Mattermost forum first
  - (Others have the same question)
- We will not answer questions through email;
  Last resort for private questions: deep-learning-course-cs-ewi@tudelft.nl.

Sign up for Mattermost here: `https://mattermost.ewi.tudelft.nl/signup_user_complete/?id=zfgt9j8reidhty67frsfm4uuzw`

Course structure

Study load		1 ECTS = 25h -30h	
ECTS:	6		
	min hours:	150	
	max hours:	180	
	hours	freq	h
Lectures	2	7	14
Prepare lecture	1	7	7
Paper presentations	2	7	14
External seminar	1	7	7
Lab supervised Q3	2	7	14
Lab supervised Q4	4	7	28
Project self	6	7	42
Prepare presentation	4	1	4
Read papers	4	7	28
Study for exam			16
Exam			3
		total:	**174**

All info on Brightspace.

Grading

- 40 % Lab project (> 5.7)
- 40 % Exam (> 5.7)
- 10 % paper presentation
- 10 % Question submission

Exam questions to hand in (10% of the grade)

Submit multiple choice exam questions

- 1 exam question for every paper (before paper presentation)
- 2 exam questions for each lecture (before next lecture)
- 4 options (a, b, c, d); also submit the answer
- Closed book exam

Exam (40%) will be inspired on the submitted questions

Lab project: 40%

- Use Brightspace to register in teams of 2 people.
- Q3: 2h per week assignments (not graded)
- End of Q3: define your own project
- Q4: work on project (4h guided, 6h self)
- End of Q4: present a poster about project
- Hand in a report (how, why, and what you did)

Paper presentation grade: 10%

- Every week in Q3 we will read 2 papers
- Each paper is presented by a group of students,
- Graded individually
- Paper presentation choice ranked on speed and preference
- Seminar attendance is not mandatory (Yet: exam questions lurk there)
- Each paper is presented in 4 parallel sessions (please stick to your room)

Paper presentations: How to?

- Present max 30 min per paper
- Include:
  - the main contribution of the paper,
  - the research that this paper builds upon,
  - the research tree and competing methods (Google scholar)
  - strengths, weaknesses, improvements and discussion points
- Post presentations on MatterMost (Channel: paper-presentations). Papers are part of the exam.

Follow my presentation guidelines:
http://jvgemert.github.io/links.html

Questions?