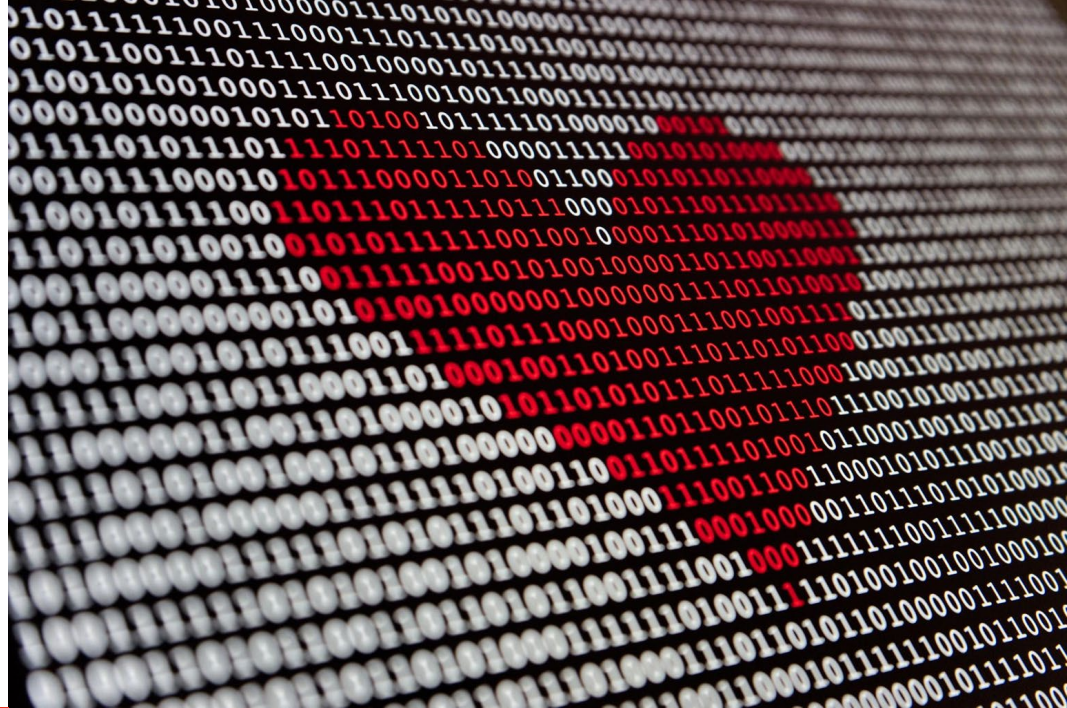


Digitalisering og kunstig intelligens

etter nordisk modell

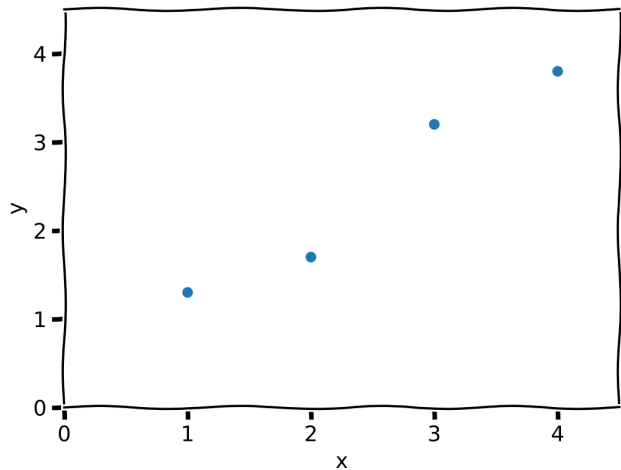


Inga Strümke, Simula
NOKIOS, Oktober 2020

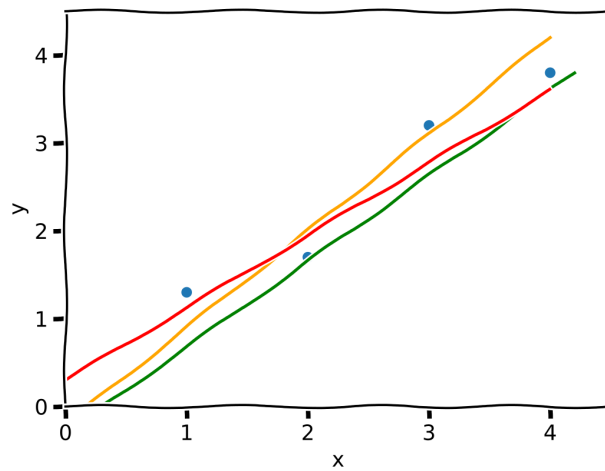
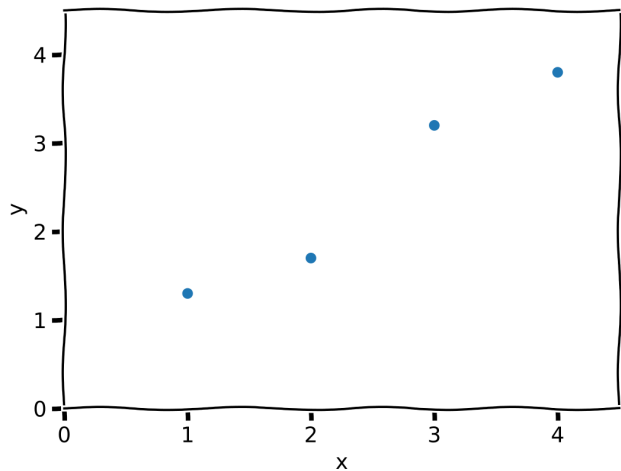
1. Hvor vil vi?



Maskinlæring på 30 sekunder



Maskinlæring på 30 sekunder



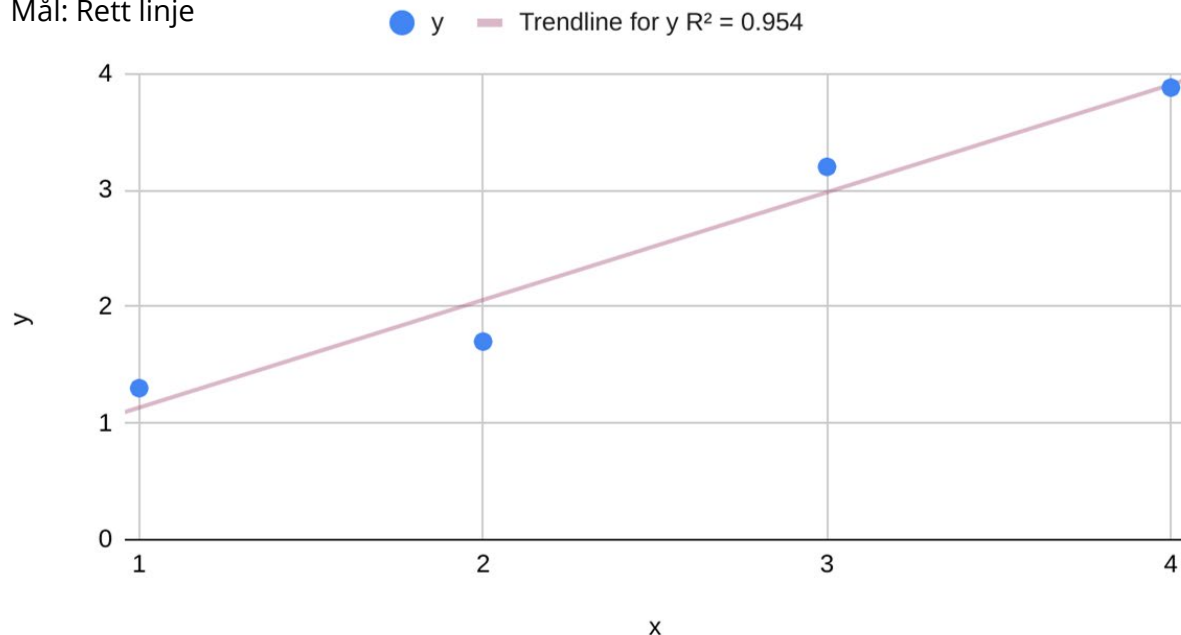
Maskinlæring i Excel

Data:

x	y
1	1.3
2	1.7
3	3.2
4	3.88

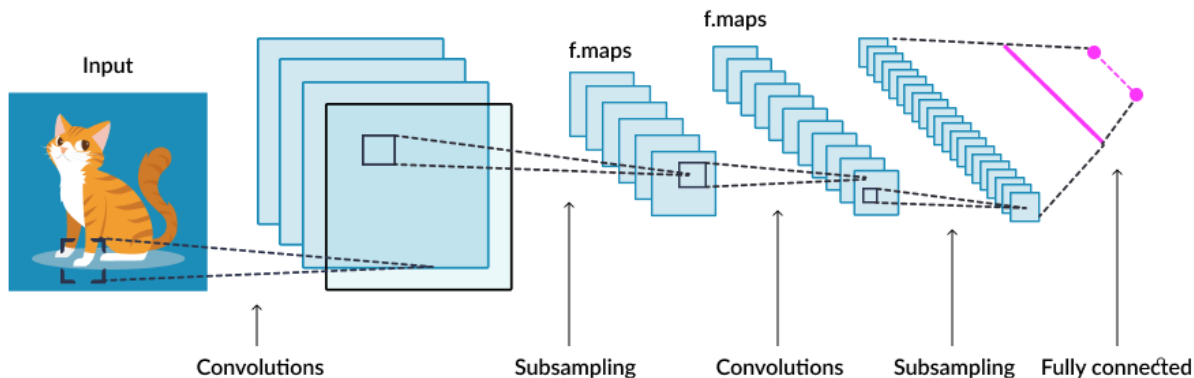
$$R^2 = \left(\frac{1}{n-1} \frac{\sum (x - \mu_x)(y - \mu_y)}{\sigma_x \sigma_y} \right)^2$$

Mål: Rett linje



Maskinlæring!!!

- Gjenkjenne ansikter (og katter og hunder)
- Styre biler
- Detektere kreft
- Regne ut kredittscore
- ...
- "Forstå" sammenhenger fra data





Predicted: **wolf**
True: **wolf**



Predicted: **husky**
True: **husky**



Predicted: **wolf**
True: **wolf**



Predicted: **husky**
True: **husky**



Predicted: **husky**
True: **husky**



Predicted: **wolf**
True: **husky**



Predicted: **husky**
True: **husky**



Predicted: **wolf**
True: **wolf**



Predicted: **husky**
True: **wolf**



Predicted: **wolf**
True: **wolf**

Facebook language predicts depression in medical records

Johannes C. Eichstaedt^{a,1,2}, Robert J. Smith^{b,1}, Raina M. Merchant^{b,c}, Lyle H. Ungar^{a,b}, Patrick Crutchley^{a,b}, Daniel Preotiuc-Pietro^a, David A. Asch^{b,d}, and H. Andrew Schwartz^e

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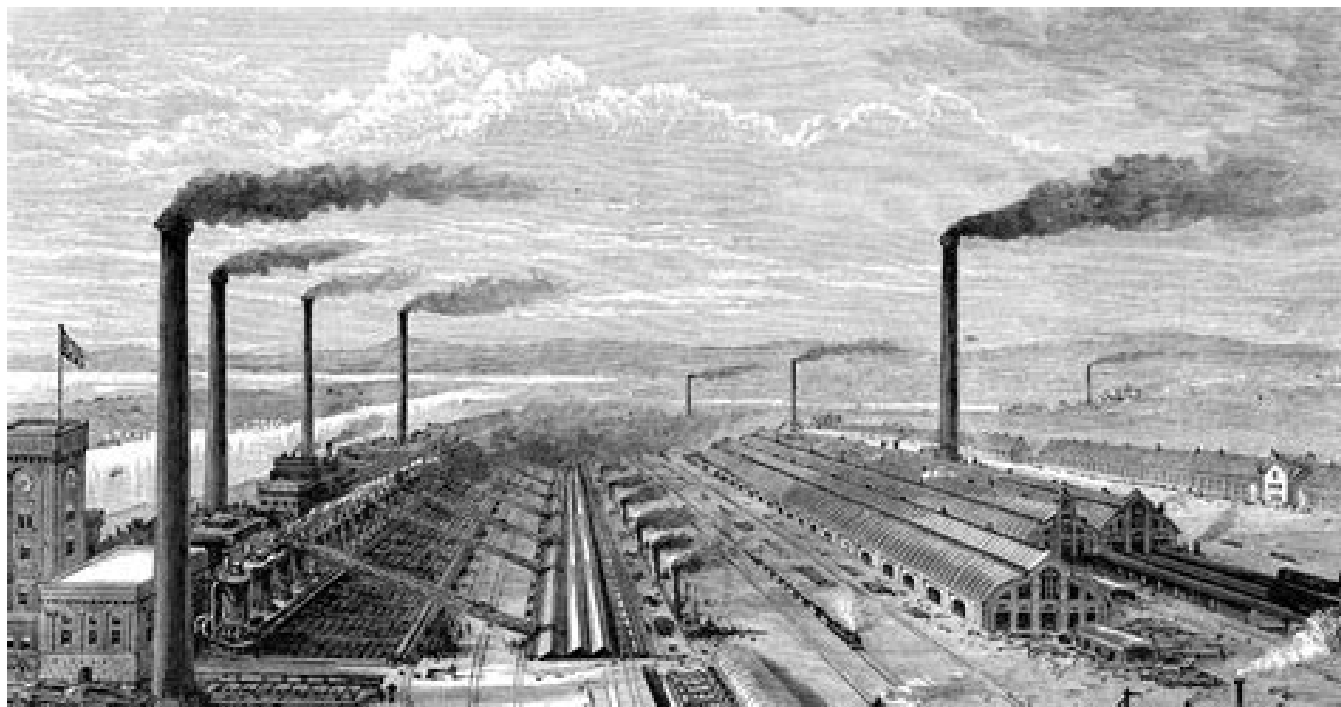
Edited by Susan T. Fiske, Princeton University, Princeton, NJ, and approved September 11, 2018 (received for review February 26, 2018)

Depression, the most prevalent mental illness, is underdiagnosed and undertreated, highlighting the need to extend the scope of current screening methods. Here, we use language from Facebook posts of consenting individuals to predict depression recorded in electronic medical records. We accessed the history of Facebook statuses posted by 683 patients visiting a large urban academic emergency department, 114 of whom had a diagnosis of depression in their medical records. Using only the language preceding their first documentation of a diagnosis of depression, we could identify depressed patients with fair accuracy [area under the curve (AUC) = 0.69], approximately matching the accuracy of screening surveys benchmarked against medical records. Restricting Facebook data to only the 6 months immediately preceding the first documented diagnosis of depression yielded a higher prediction accuracy (AUC = 0.72) for those users who had sufficient Facebook data. Significant prediction of future depression status was possible as far as 3 months before its first documentation. We found that language predictors of depression include emotional (sadness), interpersonal (loneliness, hostility), and cognitive (preoccupation with the self, rumination) processes. Unobtrusive depression assessment through social media of consenting individuals may become feasible as a scalable complement to existing screening and monitoring procedures.

the diagnosis of depression, which prior research has shown is feasible with moderate accuracy (15). Of the patients enrolled in the study, 114 had a diagnosis of depression in their medical records. For these patients, we determined the date at which the first documentation of a diagnosis of depression was recorded in the EMR of the hospital system. We analyzed the Facebook data generated by each user before this date. We sought to simulate a realistic screening scenario, and so, for each of these 114 patients, we identified 5 random control patients without a diagnosis of depression in the EMR, examining only the Facebook data they created before the corresponding depressed patient's first date of a recorded diagnosis of depression. This allowed us to compare depressed and control patients' data across the same time span and to model the prevalence of depression in the larger population (~16.7%).

Results

Prediction of Depression. To predict the future diagnosis of depression in the medical record, we built a prediction model by using the textual content of the Facebook posts, post length, frequency of posting, temporal posting patterns, and demographics (*Materials and Methods*). We then evaluated the performance of this model by comparing the probability of depression estimated by our algorithm



2. Ta styringen *overordnet*



The New York Times

THE NEW NEW WORLD

How Cheap Labor Drives China's A.I. Ambitions



1. Verdien av dataene våre
2. Løse juridiske og etiske utfordringer
(statsbudsjettet, I'm talking to you)
3. Koordinerende organ som *støtter*

