

AI For Everyone

Agenda

- Terminology
- What can AI do?
- How does AI work?
- How can you work with AI?

First Some Bingo

AI Is Inventing Language Humans Can't Understand. Should We Stop It?

What happened:

- Two bots were “talking” to each other
- The researches made a mistake
- They didn't make sure that the bots use real english

<https://www.fastcompany.com/90132632/ai-is-inventing-its-own-perfect-languages-should-we-let-it>

AI Can Now Create Websites From Drawings

What happened:

- Well, technically correct, but ...
- Expectation vs Reality is not met
- Try it: <https://sketch2code.azurewebsites.net/>

<https://news.developer.nvidia.com/ai-can-now-create-websites-from-drawings/>

Product Manager



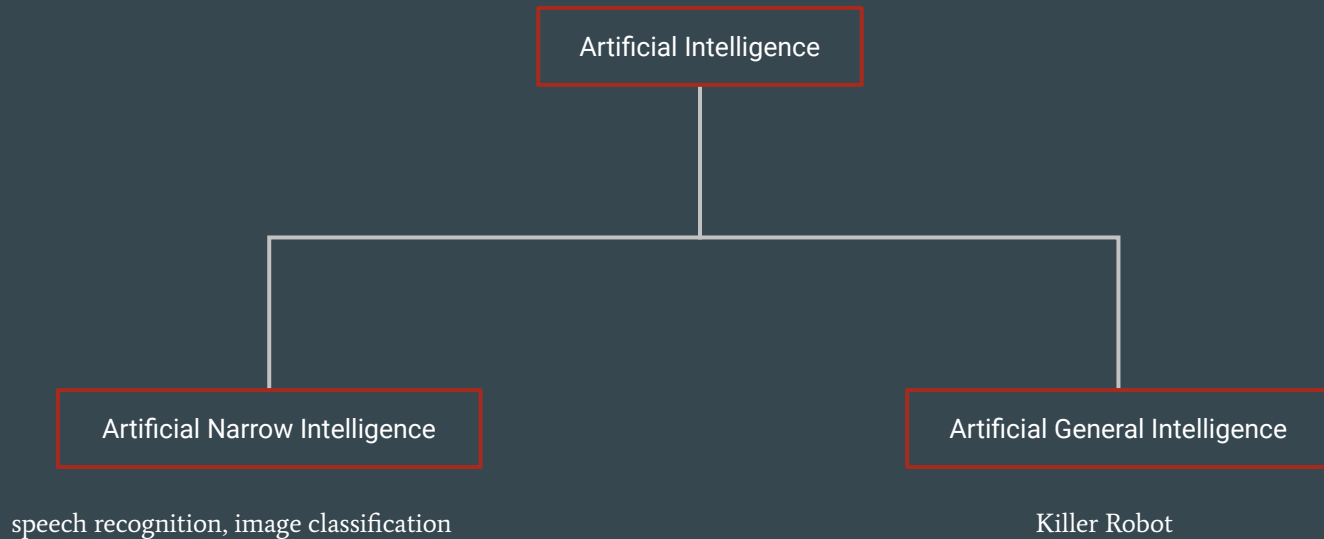
Designer



Engineer



What is AI



Terminology

Artificial Intelligence

Data Science

Deep Learning

Magic

Machine Learning

Neural Networks

Definitions

- Artificial Intelligence

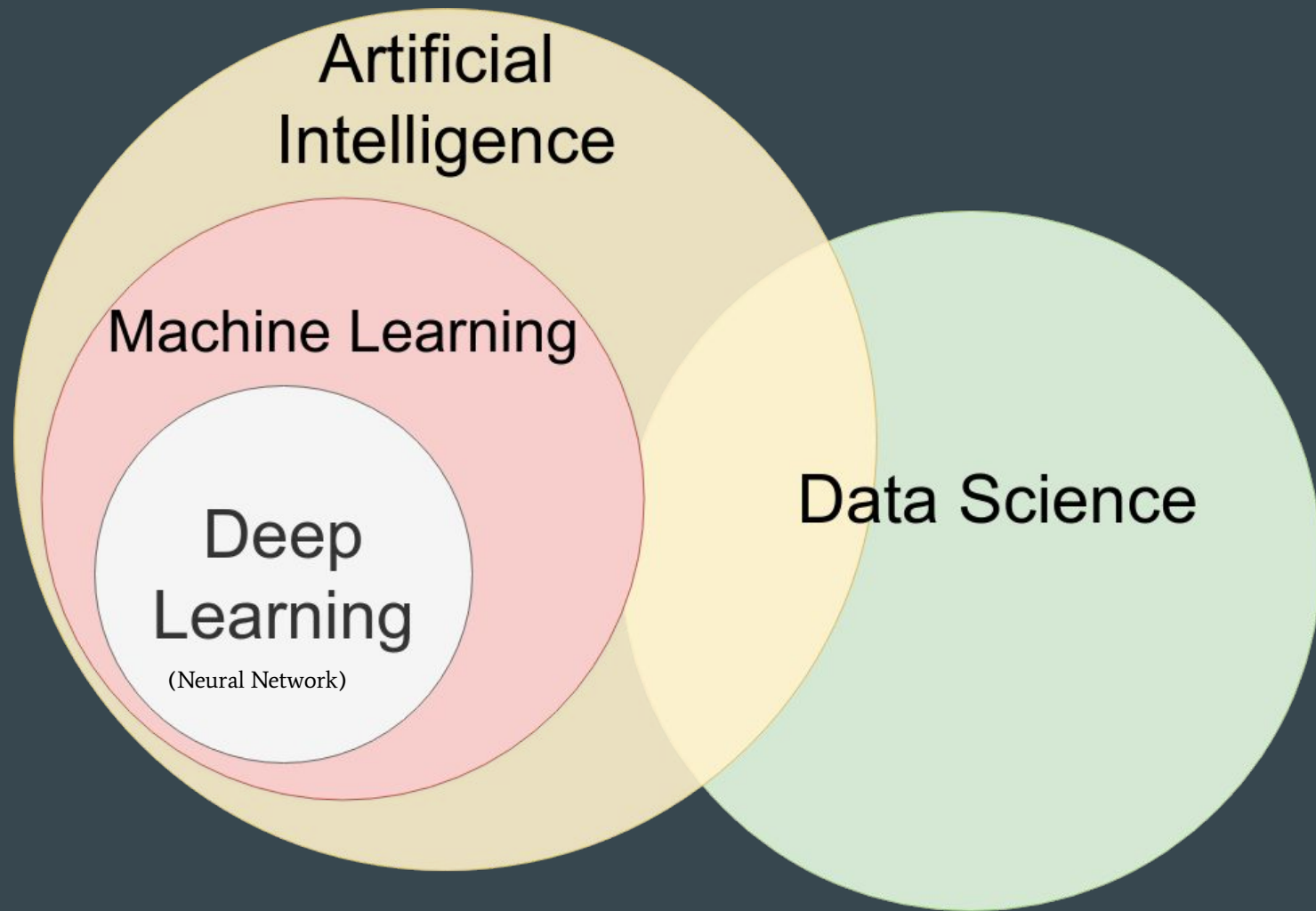
- The capability of a machine to imitate intelligent human behavior.
 - By Merriam-Webster

- Machine Learning

- “Field of study that gives computers the ability to learn without being explicitly programmed”
 - By Arthur Samuel

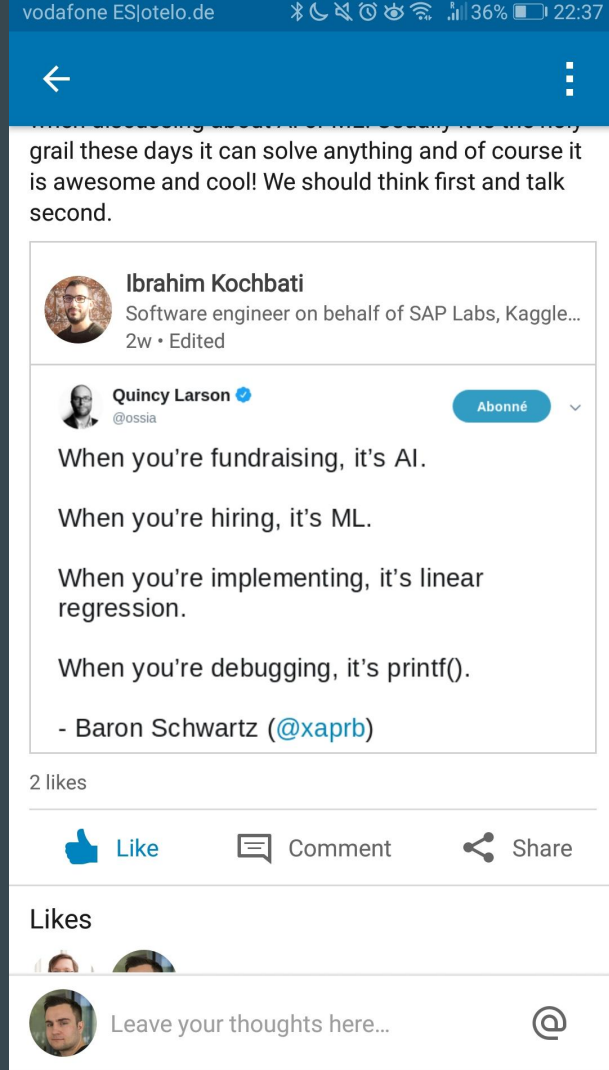
- Data Science

- “Science of extracting knowledge and insights from data”
 - By Unknown



Not so friendly classification

- If you are fundraising
 - It's AI
- When you are hiring
 - It's Machine Learning
- When you are implementing
 - it's linear regression
- When you are debugging
 - it's print()



What can AI do?

What can AI do?



BROKEN

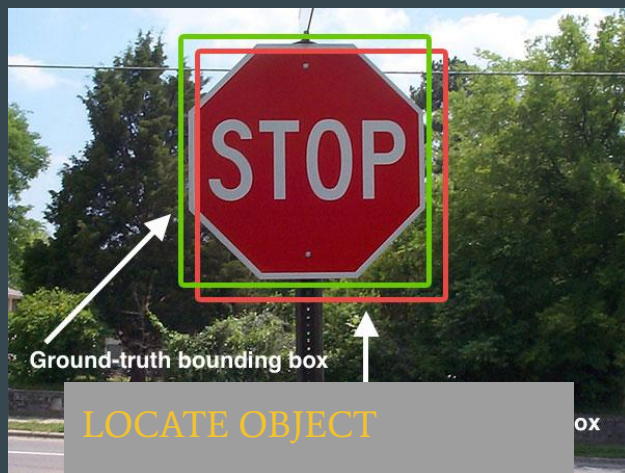
View: All

Size	Subject
4KB	Feel the sweet taste of p
4KB	This unexampld remedy
11KB	עצמי אי ביי בעברית -חדש
4KB	Experience astonishing s
4KB	Hurry to accept this unique offer, 'cuz it means ...
4KB	Experience real masculine power with a bigger ...
4KB	Experience real masculine power with a bigger ...
7KB	Potenzschwache - wir haben die Lösung
3KB	I like others, allows
3KB	I like others, allows
3KB	Purchase medications with CanadianPharmacy ...
3KB	Quality watches at 25% discount
5KB	Energy fur Ihren Schwanz, kaufen und 85% spa...
3KB	Replica watches
3KB	Exquisite Replica
4KB	Vlagra
4KB	Cialis
4KB	\$e> was never so crazy before! Manster Is yo...
5KB	Stop complaining about small penis - change it!
5KB	Give your s'e_xual life a boost
5KB	More sexy& your small d...the best look...

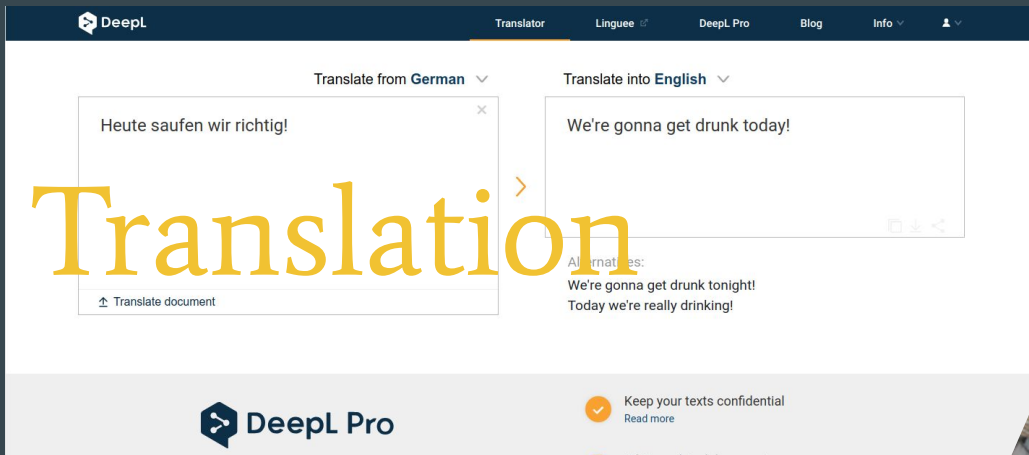
SPAM / NOT SPAM

Name	Date
Megan C. Escobar	12:28 AM
Megan P. Escobar	12:27 AM
Megan Q. Escobar	12:27 AM
Carlssa Vazquez	12:17 AM
Nikki Shultz	10/28/2007 11:58 PM
Nikki Shultz	10/28/2007 11:58 PM
Mayra Norwood	10/28/2007 11:52 PM
Breitling Watches	10/28/2007 11:45 PM
Angelita Cuevas	10/28/2007 11:28 PM
Watches	10/28/2007 11:13 PM
Exquisite Replica	10/28/2007 11:12 PM
Sex can	10/28/2007 10:44 PM
Enjoyable	10/28/2007 10:44 PM
Nanette Stroud	10/28/2007 07:39 PM
Damian X. Pitts	10/28/2007 06:56 PM
Damian K. Pitts	10/28/2007 06:56 PM
Damian X. Pitts	10/28/2007 06:56 PM

Unread: 109 Total: 1091



Little More Complex



Translation



Transcribe

**Rule of thumb:
Everything a human can do
within a second**

What can not be done by AI?

Reply to this:

Hi,

I accidentally typed in a wrong email address, could you please change it from kontakt+1@stefan-hesse.net to kontakt@stefan-hesse.net?

Thanks in advance,
Stefan Hesse

Rule of thumb

- Everything that takes a human a long time
 - Writing Reports
 - Writing Books
 - Analyzing complex scenarios

How does AI work? *(roughly)*

Most common technique: Supervised Learning



Let's Look At Some Flowers



Iris setosa

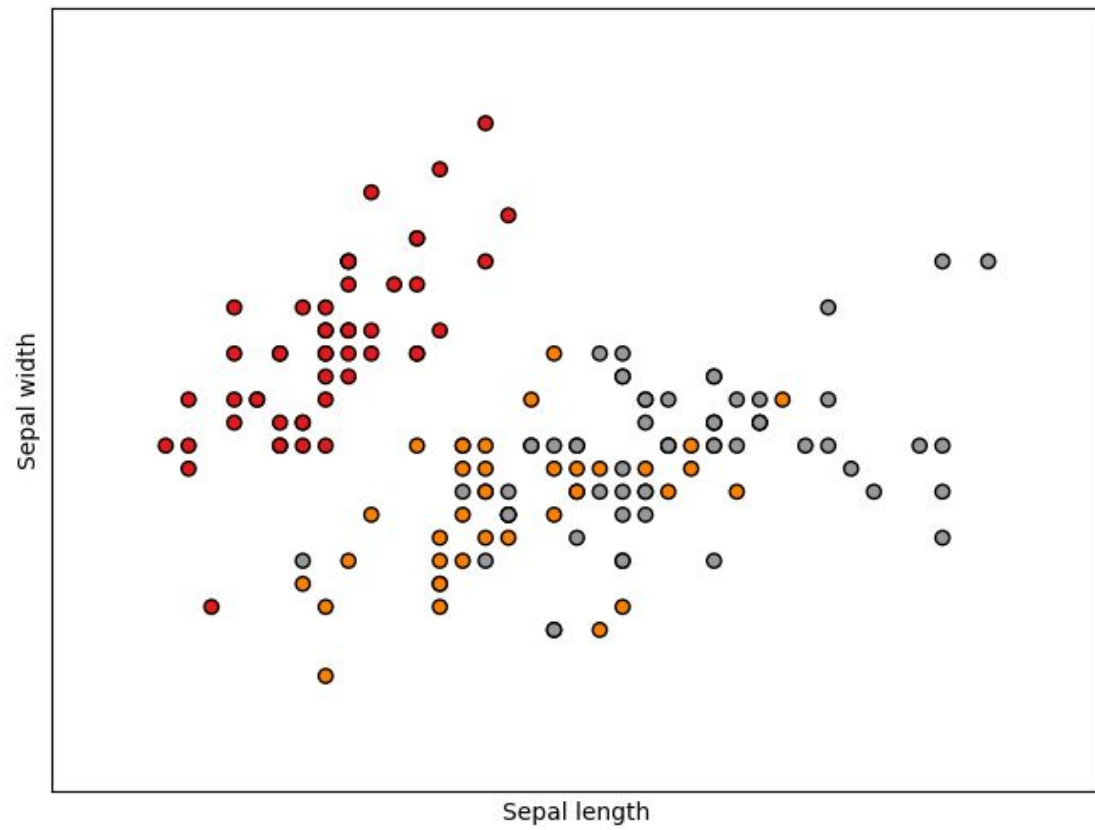


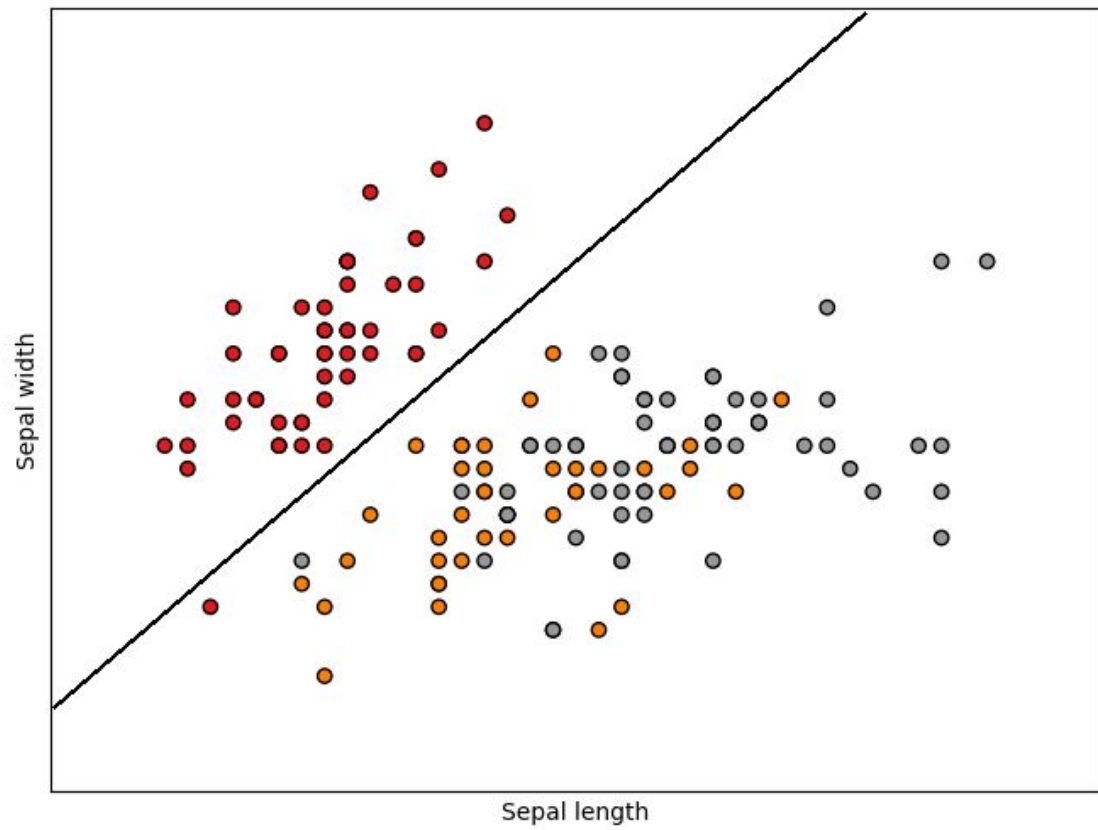
Iris versicolor



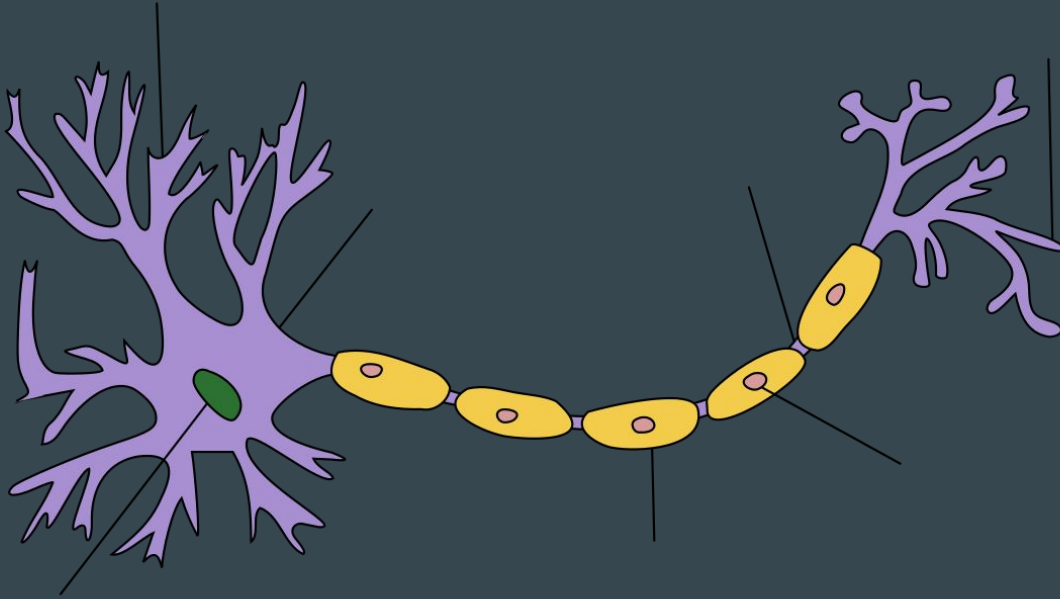
Iris virginica

Petal Length	Petal Width	Species
4.8	3	setosa
5.1	3.8	setosa
4.6	3.2	setosa
7	3.2	versicolor
6.4	3.2	versicolor
6.9	3.1	versicolor
6.3	3.3	virginica
5.8	2.7	virginica
7.1	3	virginica

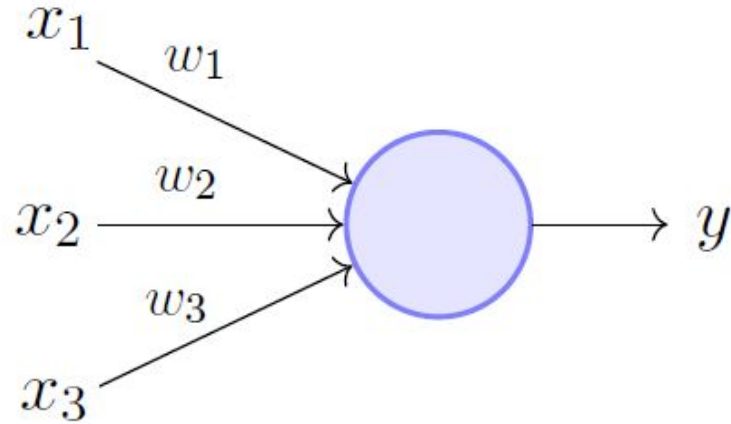




Neuron

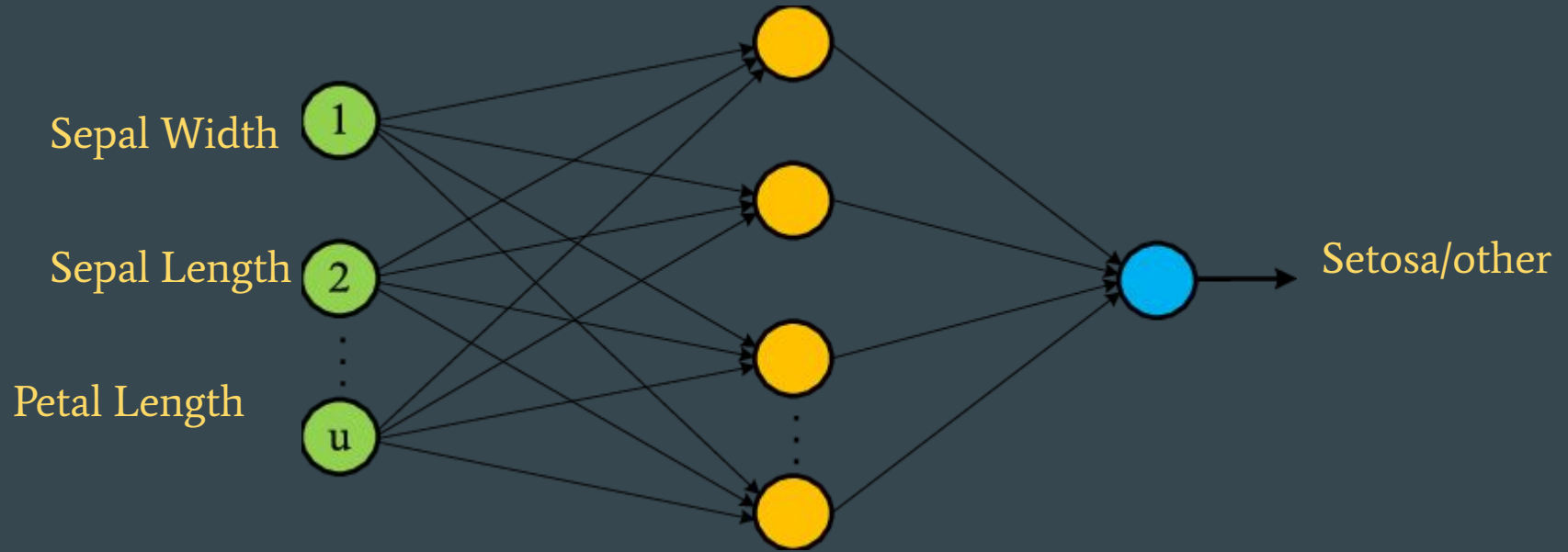


Artificial Neuron or Perceptron



Perceptron Model (Minsky-Papert in 1969)

How to Find that Function?



Prediction

Setosa

Other

Setosa

20

0

Other

1

20

Correct Values

Back Reference: What AI can not do

- As we have seen: AI needs a lot of data
 - This data has to be labeled
 - Someone has to label it
 - It is also not always clear how to label data
-
- Other Issues: Generalization
 - As humans it's easy to transfer knowledge
 - Not so easy for an AI: New circumstances -> Require a new model

Good Resource for more about the topic:

<https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/what-ai-can-and-cant-do-yet-for-your-business>

How can you apply AI?

Depends

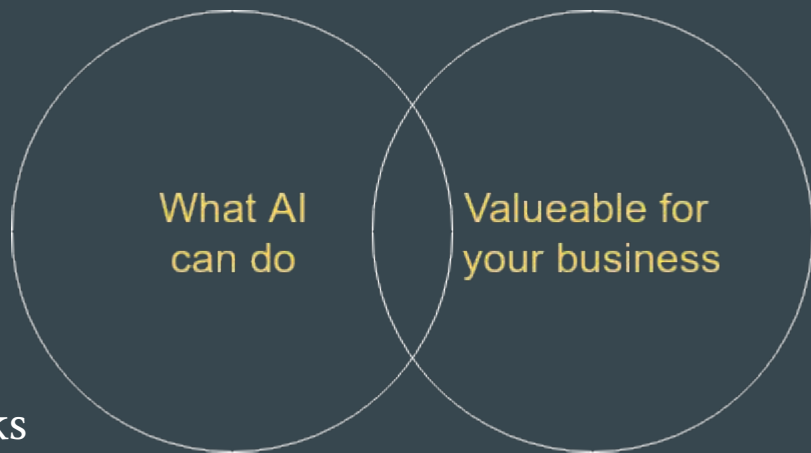
- If you are a developer:
 - Take an online class on machine learning
 - And/Or: Use APIs from Google, Amazon etc..
- Online Courses
 - More actionable: Udacity, Udemy, etc..
 - More academic: Coursera, edX, etc..
 - Find yours here: <https://www.mooc-list.com/>

Random APIs you could use

- Face Detection and Face Recognition
 - <http://api.animetrics.com/demo>
 - <http://cloud.eyedea.cz/api/face>
 - <https://www.betafaceapi.com/demo.html>
- Text Analysis and Natural Language Processing APIs
 - <https://labs.wit.ai/demo/index.html>
 - <https://monkeylearn.com/contact/>
- Image Processing
 - <https://cloud.ibm.com/apidocs/visual-recognition>
- Everything
 - Amazon, Google or Microsoft...

Get Started With AI

- A broad Framework
 - Think about what AI can do
 - Then break down your business into tasks
 - Sorting lists of potential Leads
 - Coming up with new A/B Tests
 - etc.
 - Collect (some) data
 - Talk to an engineer
 - Discuss further steps



Head Start: Play a little

Weka 3.5.5 - Explorer

Program Applications Tools Visualization Windows Help

Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Open file... Open URL... Open DB... Generate... Undo Edit... Save...

Filter

Choose None

Current relation

Relation: iris
Instances: 150
Attributes: 5

Attributes

All None Invert Pattern

No.	Name
1	sepal.length
2	sepal.width
3	petal.length
4	petal.width
5	class

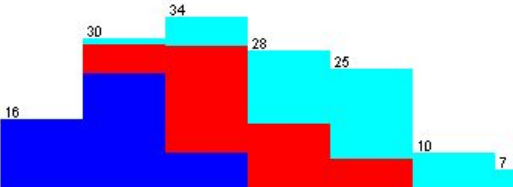
Selected attribute

Name: sepal.length
Missing: 0 (0%)
Distinct: 35
Type: Numeric
Unique: 9 (6%)

Statistic	Value
Minimum	4.3
Maximum	7.9
Mean	5.843
StdDev	0.828

Class: class (Nom)

Visualize



OpenRefine cosing_db csv Permalink

Facet / Filter Undo / Redo 0 / 0

26111 rows

Show as: rows records Show: 5 10 25

Using facets and filters

Use facets and filters to select subsets of your data to act on. Choose facet and filter methods from the menus at the top of each data column.

Not sure how to get started?
[Watch these screencasts](#)

			COSING Ref No	INCI name
☆	1.	94753		DISODIUM T FORMYLPRO
☆	2.	94896		(LIQUIDAMBA LACTIFLORA
☆	3.	95645		ACRYLATES/
☆	4.	96229		ASTROCARY
☆	5.	89177		BARLEY SH-F
☆	6.	89078		GOSSYPUM
☆	7.	96248		HYDROLYZE VIRIDISSIMA/ LEAF/(ANGEL /PAEONIA LAC GLUTINOSA/
☆	8.	96252		HYDROLYZE DAHURICA/GI GRANDIFLOR

Thank you for your attention.