Machine learning

The brain as the master processor

A presentation by Jad Issa

So... What does this thing mean?

Wait! Are the machines going to kill us like in sci-fi movies?

But can a machine learn by itself? (hint: yes!)

Uses in ordinary life of machine learning:

- Facial recognition (Facebook, camera apps, etc...)
- Speech recognition (Google Now, Apple Siri, etc...)
- Optical character recognition (scanning text)
- Forecasts into the future (weather, prices, anything really)
- Classification of diseases (types of cancer, etc...)
- Evaluation of health risks
- Self-driving cars

OK, I got it, but we still do it better, so I think we're safe, right? (No!)

Examples of superhuman artificial intelligence

- Calculation
- Big data processing
- Data sharing
- Logical thinking
- Maths in general (better than most of us :P)
- Digit recognition
- Chess

“ It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.

-- Sherlock Holmes - A scandal in Bohemia ”

But how can it do so?

A real neural network

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An artificial neural network

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How is that like the real neuron?

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Neural network basic components

- Neurons
- Synapses

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How is the data processed?

Our neural network

Goal: be less wrong (a.k.a heuristic thinking)

1. Start with random weights
2. Improve it to be **less wrong**
3. Repeat
4. Just accept it when it's good enough

Break!

My philosophy of automation and upgrade

(or how machine learning matters to you)

Does that mean we won't work anymore?

Not yet!

Education in light of machine learning

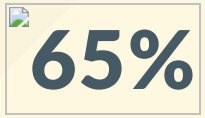
The natural way we learn stuff

The way modern education works

“**Life is meant to be explored not to be known beforehand**

-- *Me* ;P ”

The teenage liberation handbook



Does that mean we should quit school?

Not really...

Ethics of machine learning

Some dangerous uses of machine learning

- DARPA's automatic drones (and military uses in general)
- Big corporation automatic spies (1984 gets practical)
- Make humans seem insignificate, rather useless.
- Make dangerous gene manipulation practical (Brave New World materializes before 2050)
- Destroy art by making art clones (prole music)

Explore machine learning and its potential

Papers will be distributed to you

Can you help me get involved?

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What if I don't want to code?

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