Artificial intelligence and impact on labour markets
Nordic Financial Unions June 2017

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Hanne Shapiro – June 2017

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What history can tell us about impact of technologies on jobs:

Fra hest til
Hestekræfter-
til?

ARTIFICIAL INTELLIGENCE - INTELLIGENT SYSTEMS

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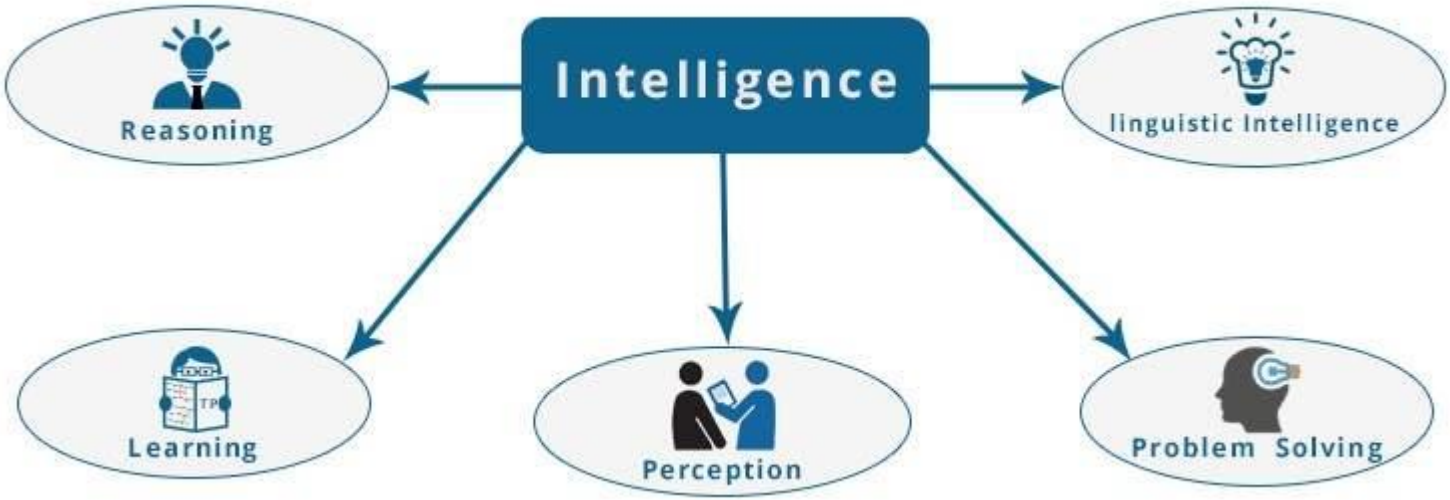
The ability of a system to calculate, reason, perceive relationships and analogies, learn from experience, store and retrieve information from memory, solve problems, comprehend complex ideas, use natural language fluently, classify, generalize, and adapt new situations

Types of Intelligence:

- Linguistic intelligence
- Musical intelligence
- Logical-mathematical intelligence
- Spatial intelligence
- Bodily-Kinesthetic intelligence
- Intra-personal intelligence



Mixed views on the impact of AI and related technologies

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- "I am in the camp that is concerned about super intelligence…I don't understand why some people are not concerned." (Bill Gates)

- "Advancing machine intelligence is the most important problem facing the world today." (Nobelist Bob Schiller)

- "We will be looking at hordes of citizens of zero economic value. Figuring out how to deal with the impacts of this development will be the greatest challenge in this century." (Michael Malone, Bill Davidow)

Augmented Expertise" one of Deloitte's Tech Trends for 2015; "Cognitive Computing" was one for 2015

Deloitte 2017- The kinetic enterprise- developed dexterity to overcome operational inertia and thrive in an environment which is in a flux

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Oecd- jobs in high risk of automation

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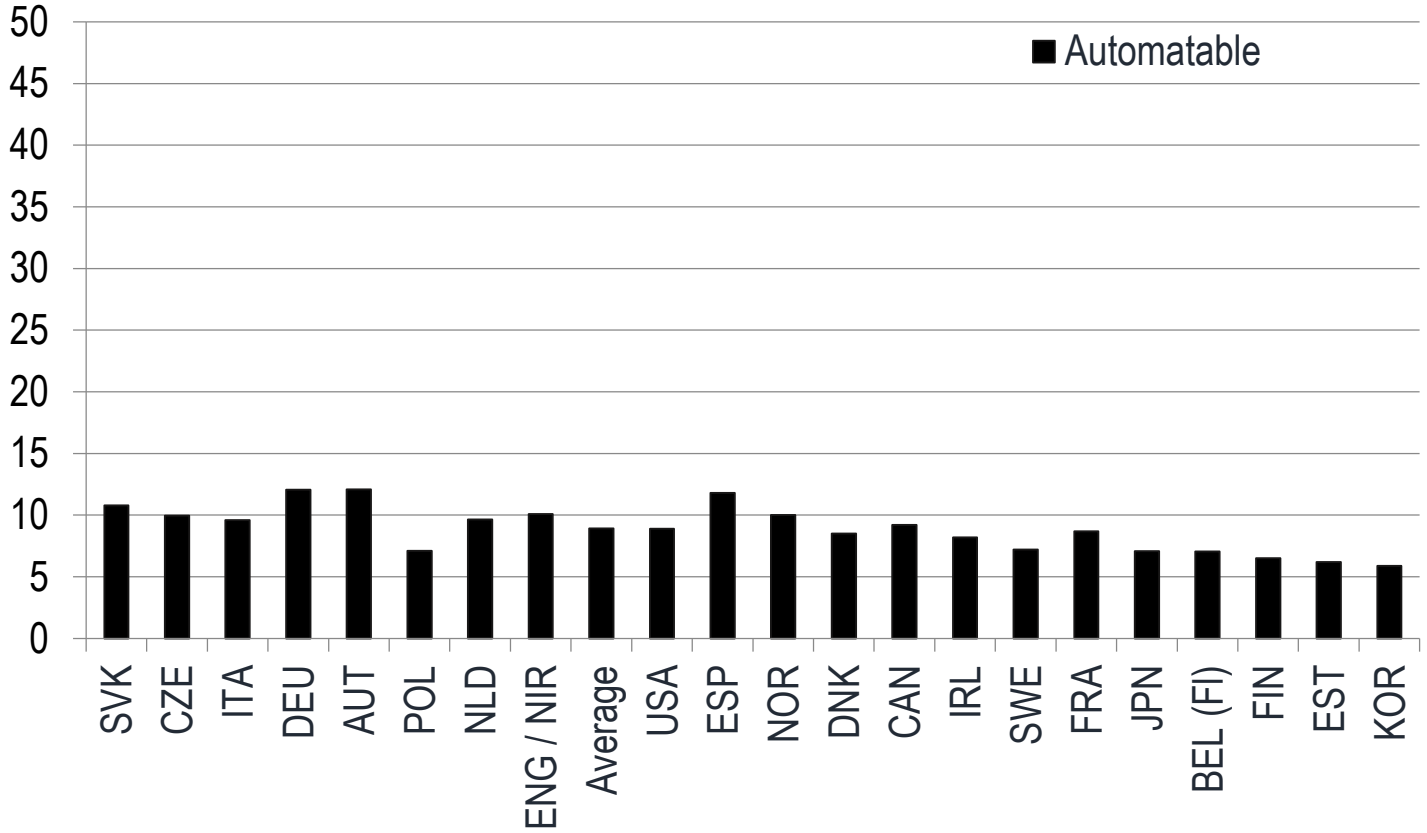

PIAAC

AI and other digital technologies mediate work in new ways, which can both lead to automation and augmentation

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AI in financial services is question about strategic choice

with a huge impact:

On quality in services, job content and professional identity

Augmentation an Alternative?

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- Augmentation—humans helping computers make better decisions, and vice-versa
- People do this by aiding automated systems that are better than humans at their particular tasks, or by focusing those tasks at which humans are still better
- The classic example: freestyle chess
  - Better than either humans or automated chess systems acting alone
  - Humans can choose among multiple computer-recommended moves
  - Humans know strengths and weaknesses of different programs

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Financial Advisors and Smart Machines

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- Financial advice has historically been the province of humans, but is increasingly available through automated systems—sometimes called “robo-advisors”
- Robo-advisors identify an ideal portfolio (typically of index funds and ETFs) based on your wealth, age, risk tolerance, etc.
- There are several online firms that provide such advice (Betterment, Wealthfront, etc.) at a lower cost than traditional advisors
- In spite of this- Financial advisors are in high demand- (global trend)

How are smart technologies used in financial services:

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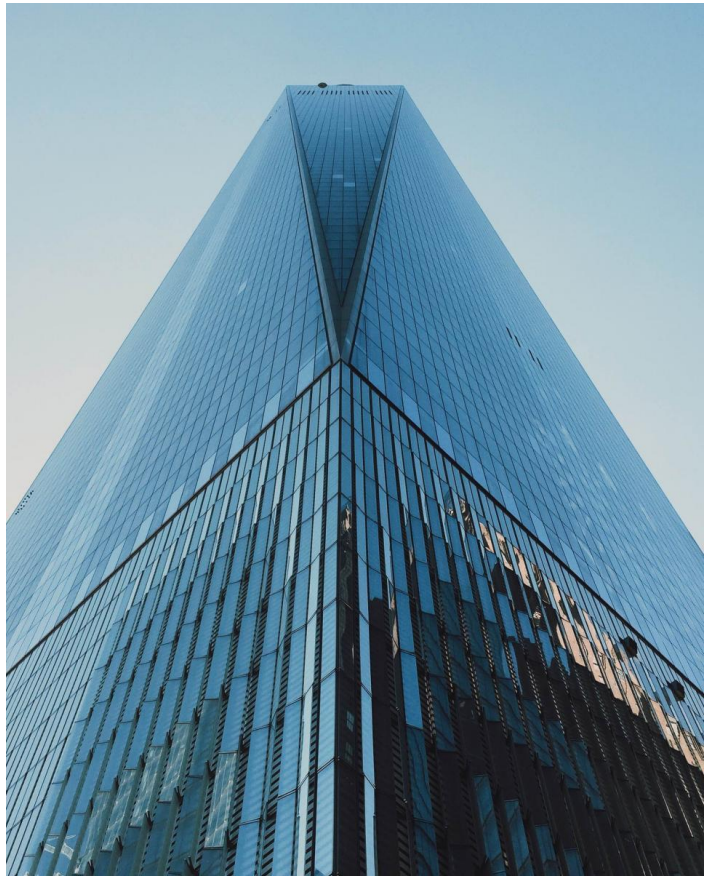
- The complexity of the financial markets, **the vast amount of data, and the need for automation and better customer experience** make cognitive technologies the right answer in a variety of situations.

- In risk management and compliance, smart agents can **evaluate all cases** against approved policies and guidelines and detect risk exposure as well as fraud



Technology +

MARKET FINANCE

Smart advisors can now provide cost-effective, personalized investment advice based on the ever-growing corpus of investment knowledge.

WEALTH MANAGEMENT

Relationship managers advise their clients by analysing large volumes of complex data such as research reports, product information, and customer profiles. Watson can be used to identify the needs of wealth management customers, offer better advice and determines customers' best options

Banking services

Smart agents can automate standard services- and can respond to open ended questions – learning as they are used- thereby being able to offer 24/7 info services and free resources for financial advise of more complex questions.

Competence areas examples:

Business applications of ICT

- **Advanced Programming languages/ algorithmic design, machine learning, cryto currency, security management, mobile applications, user inter face design**

Relationer og Kommunikation:

- **Self management**
- **Communication, relationship management**
- **Empathy**
- **Branding**

Processer:

- **Quality assurance, Business analysis/ data analysis, data driven service innovation through use of machine learning**
- **Data validation/ algorithmic understanding, visualisation technologies**

Service:

- **Problem solving, risk management and compliance**
- **design thinking, ingenuity ,**

Five Augmentation Options for professionals in financial services

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- *Step in*—advisors become experts in online advice, and assist clients to use it to their best advantage
- *Step up*—With focus on users experience, the advisors identify domains with opportunities for automating monotonous work in order to free human resources, which can improve quality in service delivery
- *Step aside*—advisors deploy AI to help clients assess the full range of options-their plusses and minuses
- *Step narrow*—advisors identify needs of specific narrow client segments and use data analytics to improve services
- *Build the steps*—advisors use their expertise to build robo-advisor systems

De nye læringsrum– (blended formelt- ikke formelt

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FINTECH SCHOOL

Online courses fx fintech core, robo advisor, regulation & fintech, blockchain, insurance tech

Platform for collaboration on research results (sharing of data)

Carnegie Mellon University platform – free courses : python, statistical reasoning; intro visual design

Claned læringsplatform. (FI) Crowdsourced learning materials globally use learning analytics & AI to tailor courses

BLOCKCHAIN UNIVERSITY

Boot camp
kurser mm

Elbot- tutorial about AI

News forms of recognition – for skills acquired. Worldwide app 3000 organisations use open badges in connection with the uptake of MOOcs

UDACIITY- new model for advanced micro credentials

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Det unikt menneskelige

STEAMS

Sense-
Making

- Contextualising data data
- Forholde sig kritisk til data kvalitet
- Teknologiforståelse
- Hypotesedannnelse- stille de skæve spørgsmål
- (kreativitet - transdisciplinaritet
- Fortolke- beslutte
- Interagere med-

The uptake of AI will not go way – but we can actively shape the future

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- Build capacity among local union reps- so that they understand how automation technologies/ AI work and how strategic decisions on deployment ultimately shape work quality
- Support and challenge members in taking charge

  off their skills and career (examples FI, Dk)
- Build anticipation capability and translate insights into training packages (new/ changed job functions)
- Facilitate insights about the strengths and limitations of digital technologies and ways they can be deployed to augment human expertise
- Make the business case for a human centered automation/augmentation business strategy

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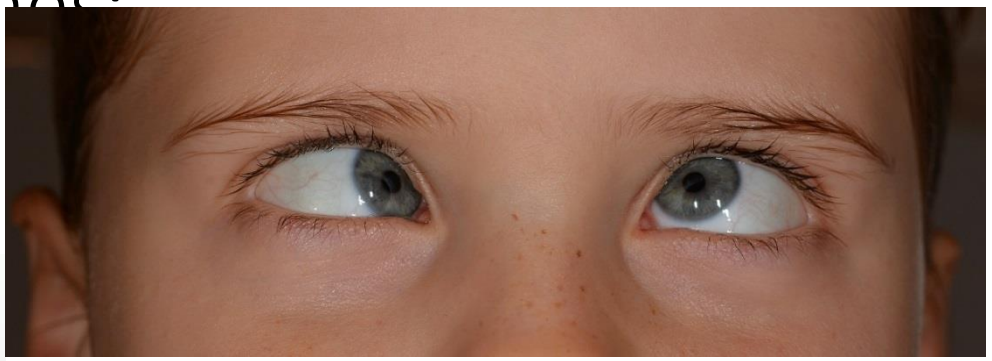
Some stepping stones:



Visions which pave the way

Systematic experiments

Shaping the future by envisioning