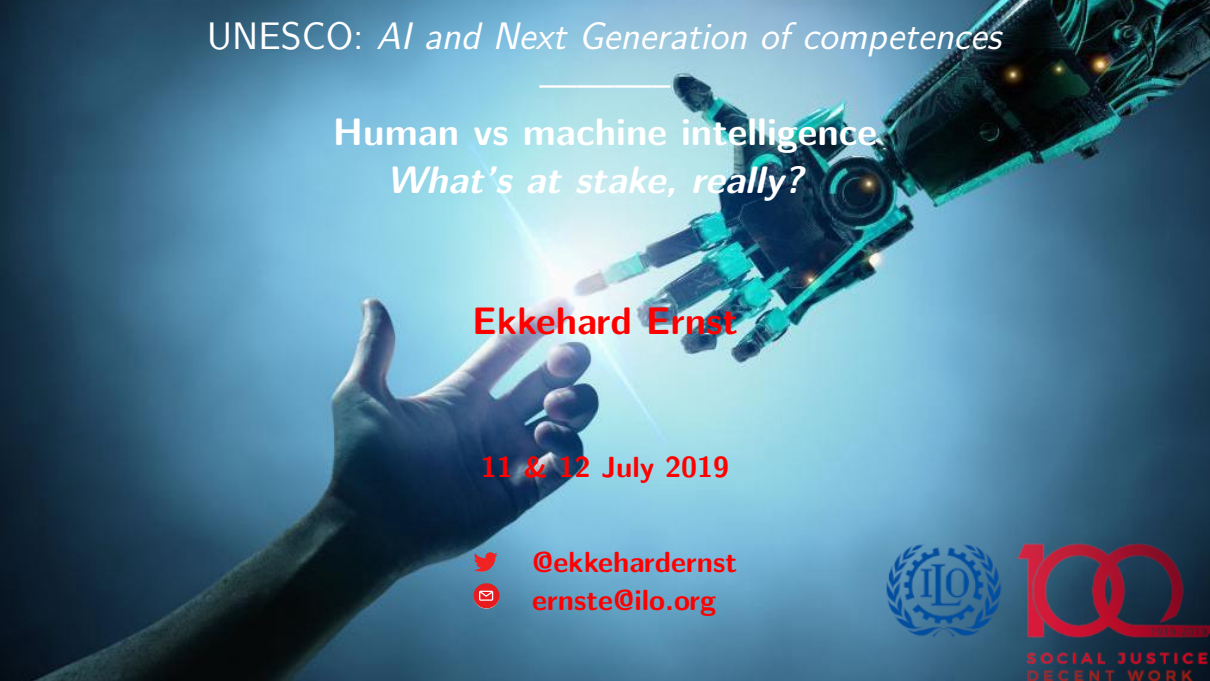
UNESCO: *AI and Next Generation of competences*

Human vs machine intelligence
What's at stake, really?



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11 & 12 July 2019

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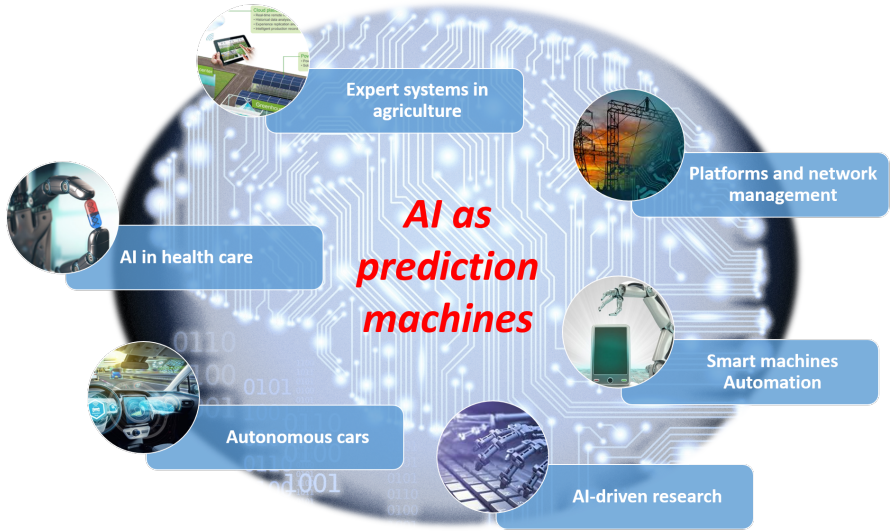
SOCIAL JUSTICE
DECENT WORK

Should we be afraid of AI?

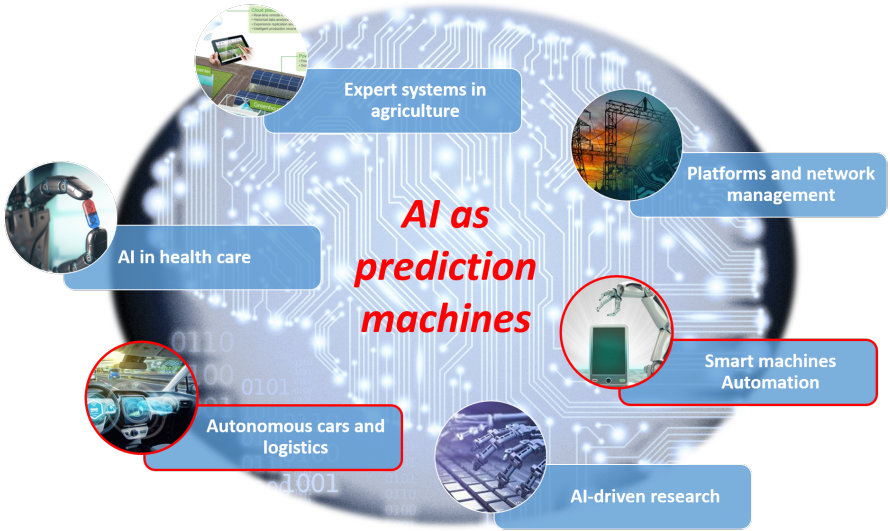
"Large neuronal networks today have a maximum of 1 million nodes but consume the energy of a nuclear power plant. The human brain has 84 billion neurons and runs on a slice of bread."

Chris Boos, AI expert and founder of Arago

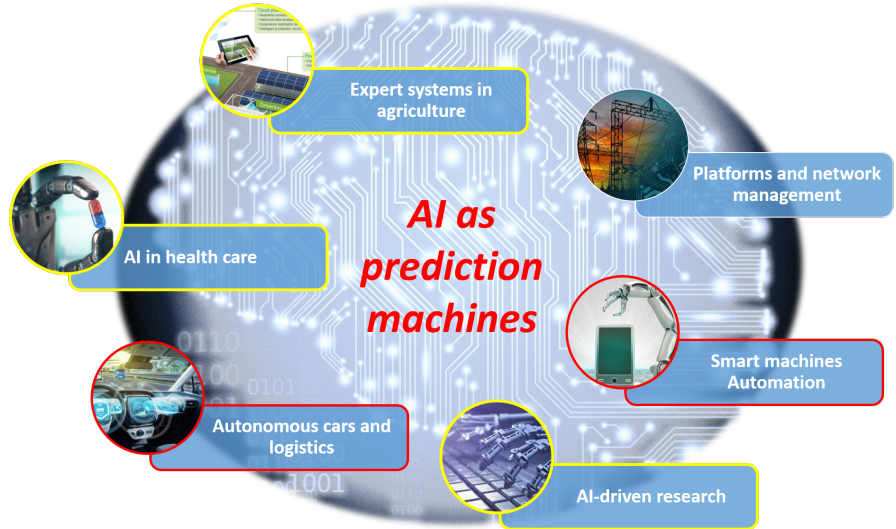
Examples of AI applications



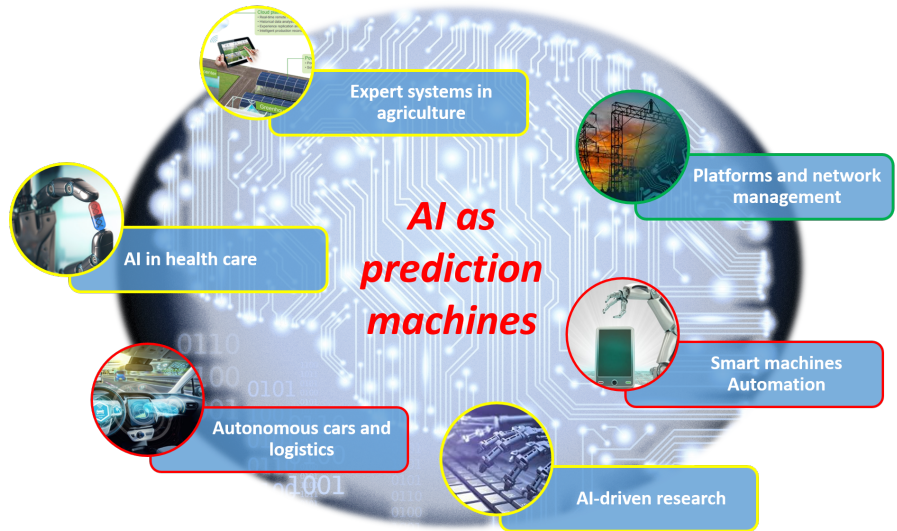
Examples of AI applications: Labour saving



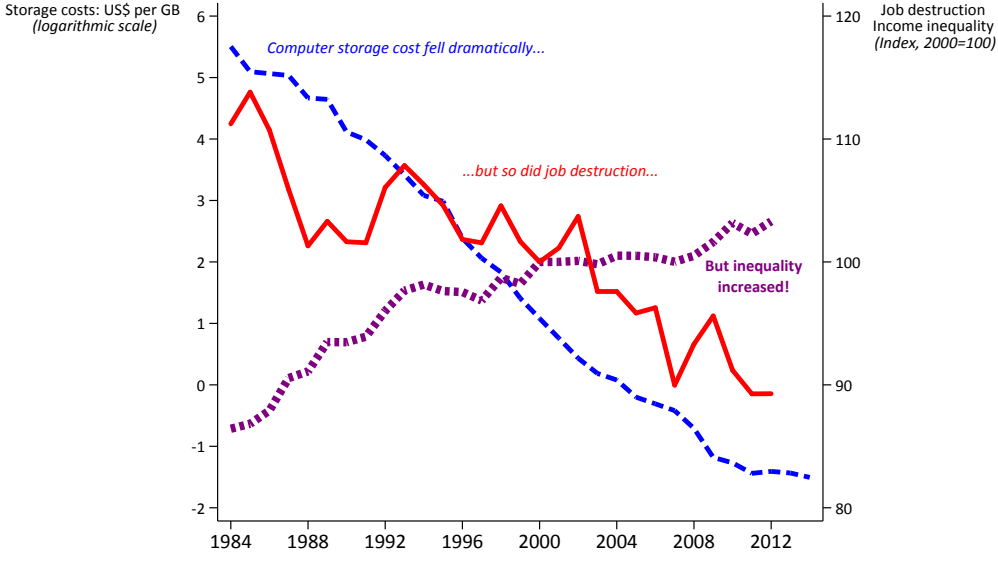
Examples of AI applications: Capital saving



Examples of AI applications: Factor enhancing

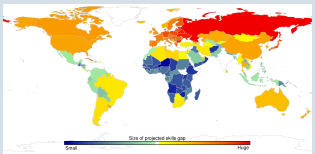


AI increases inequality, not unemployment



The four inequality challenges of AI

Rising demand for skills



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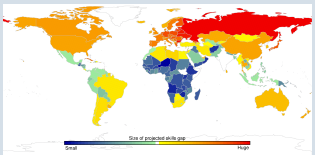
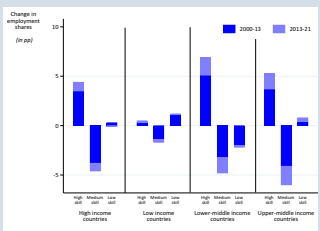
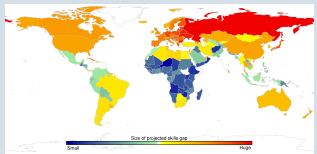


Job polarization

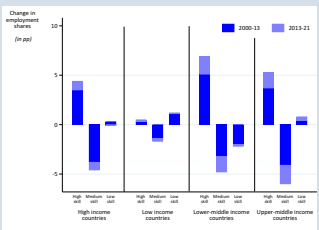


The four inequality challenges of AI

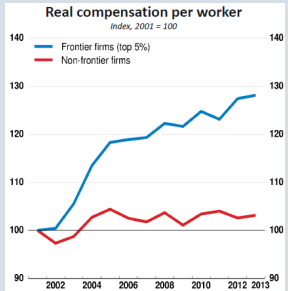
Rising demand for skills



Job polarization



Winner-takes-all with AI



The four inequality challenges of AI

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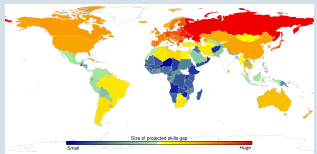

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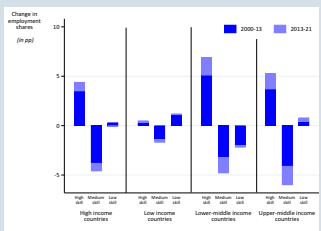

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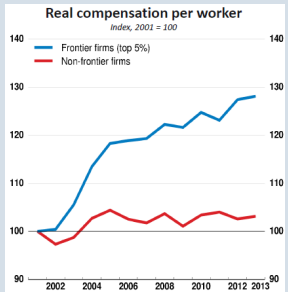
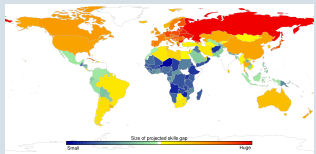


Granular discrimination

- Enhances matching efficiency....
- ...but increases price discrimination
- and perpetuates historical biases

The four inequality challenges of AI

Rising demand for skills



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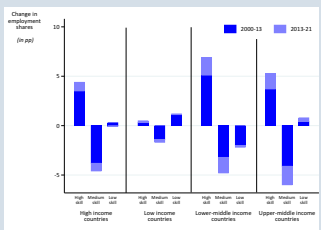
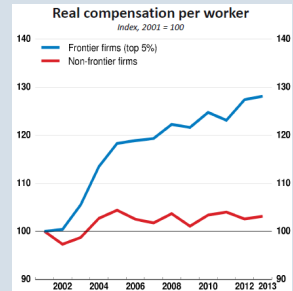


Winner-takes-all with AI



REUTERS

Amazon scraps secret AI recruiting tool that showed bias against women

Granular discrimination

- Enhances matching efficiency....
- ...but increases price discrimination
- and perpetuates historical biases

What about developing countries?

Dependent variable: Employment (in logs)	World		Developed countries		Developing countries	
robot stock	-0.055^{**}	-0.044^{**}	$\mathbf{-0.029}^{***}$	-0.034^{***}	$\mathbf{-0.343}^{***}$	-0.329
	(0.028)	(0.018)	(0.009)	(0.009)	(0.112)	(0.480)
robot stock × labour intensity		-0.023		0.012		-0.011
		(0.044)		(0.019)		(0.411)
labour intensity	0.007	0.015	0.002	0.001	-0.016	-0.010
	(0.008)	(0.015)	(0.005)	(0.005)	(0.021)	(0.217)
N	477	477	360	360	117	117
R^2	0.84	0.85	0.80	0.80	0.35	0.38

Note: Regressions include country and industry fixed effects. Trends are the coefficients of regressions on a linear trend. Robust standard error in parentheses. Significance levels: $*$, $**$, $***$ indicate significance at 0.10, 0.05 and 0.01. Controls: value added, wage. Estimates are weighted by sectoral employment in 2005.

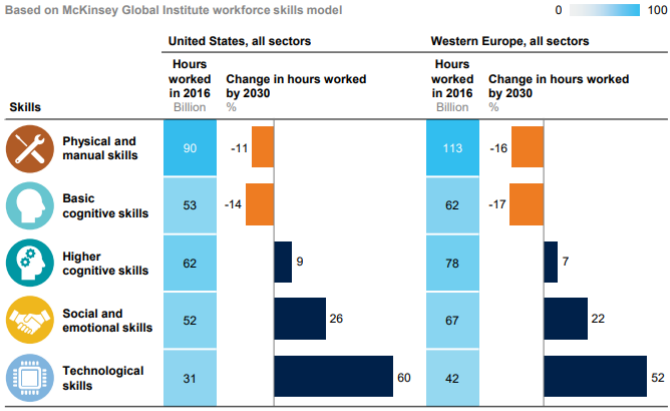
Estimated equation:

$$N_{ij} = \beta_0 + \beta_1 robots_{ij} + \beta_2 robots_{ij} \times li_{2005} + \beta_3 li_{2005} + \beta_4 VA_{ij} + \beta_5 W_{ij} + u_{ij}.$$

Emotional intelligence trumps STEM

Automation and AI will accelerate the shift in skills that the workforce needs.

Based on McKinsey Global Institute workforce skills model



NOTE: Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom. Numbers may not sum due to rounding.

SOURCE: McKinsey Global Institute workforce skills model; McKinsey Global Institute analysis

New forms of taxation to ensure protection

Digital taxation

Move from income to consumption tax

Taxing public goods

Sovereign wealth funds

Digital social security

Universal basic income or tax credit

Profit sharing arrangements

Social partnership and cooperation

Maintaining level playing field

Ensure data portability

Maintain a conducive IPR regime

Treat data as labour

Public infrastructure to promote AI

Man vs machine: More than meets the eye

Structural transformation

...is a constant feature of our economies
...might bring more inequality

AI promises large productivity gains

...including in low-skilled sectors
...with strong boost for developing countries

Preparing businesses

...prepare workforce to use digital technologies
...be aware of significant up-scaling costs

AI transforms capitalism

...creates challenges for sharing wealth
...and requires international cooperation

Want to know more?

Thank you!