



**UNDERVISNINGS
MINISTERIET**
STYRELSEN FOR
UNDERVISNING OG KVALITET

Engelsk B

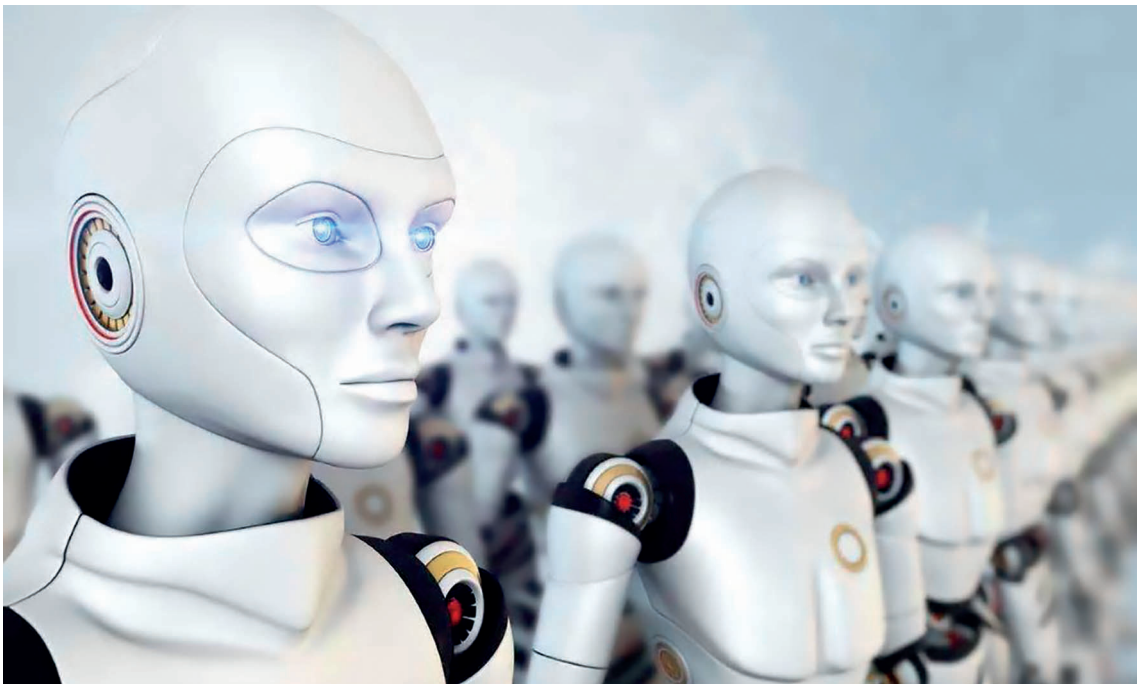
Merkantil eux

Gammel ordning

Mandag den 4. december 2017
kl. 9.00 - 13.00

Millions of UK workers at risk of being replaced by robots, study says

Workers in wholesale and retail sectors at highest risk from breakthroughs in robotics and artificial intelligence, PwC report finds



Photograph: Alamy

Larry Elliott, The Guardian, Friday 24 March 2017

¹ More than 10 million UK workers are at high risk of being replaced by robots within 15 years as the automation of routine tasks gathers pace in a new machine age.

A report by the consultancy firm PwC found that 30% of jobs in Britain were
⁵ potentially under threat from breakthroughs in artificial intelligence (AI). In some sectors half the jobs could go.

The report predicted that automation would boost productivity and create fresh job opportunities, but it said action was needed to prevent the widening of inequality that would result from robots increasingly being used for low-skill tasks.

¹⁰ PwC said 2.25 million jobs were at high risk in wholesale and retailing – the sector that employs most people in the UK – and 1.2 million were under threat in manufacturing, 1.1 million in administrative and support services and 950,000 in transport and storage.

The report said the biggest impact would be on workers who had left school
¹⁵ with GCSEs or lower, and that there was an argument for government intervention in education, lifelong learning and job matching to ensure the potential gains from automation were not concentrated in too few hands. Some form of universal basic income might also be considered.

Jon Andrews, the head of technology and investments at PwC, said: “There’s no
²⁰ doubt that AI and robotics will rebalance what jobs look like in the future, and that some are more susceptible than others.

“What’s important is making sure that the potential gains from automation are shared more widely across society and no one gets left behind. Responsible employers need to ensure they encourage flexibility and adaptability in their
 25 people so we are all ready for the change.

“In the future, knowledge will be a commodity so we need to shift our thinking on how we skill and upskill future generations. Creative and critical thinking will be highly valued, as will emotional intelligence.”

Education and health and social care were the two sectors seen as least
 30 threatened by robots because of the high proportion of tasks seen as hard to automate.

Because women tend to work in sectors that require a higher level of education and social skills, PwC said they would be less in jeopardy of losing their jobs than men, who were more likely to work in sectors such as manufacturing and
 35 transportation. Thirty-five per cent of male jobs were identified as being at high risk against 26% of female jobs.

The PwC study is the latest to assess the potential for job losses and heightened inequality from AI. Robert Schiller, a Nobel-prize winning US economist, has said the scale of the workplace transformation set to take place in the coming decades
 40 should lead to consideration of a “robot tax” to support those machines make redundant.

John Hawksworth, PwC’s chief economist, said: “A key driver of our industry-level estimates is the fact that manual and routine tasks are more susceptible to automation, while social skills are relatively less automatable. That said, no
 45 industry is entirely immune from future advances in robotics and AI.

“Automating more manual and repetitive tasks will eliminate some existing jobs but could also enable some workers to focus on higher value, more rewarding and creative work, removing the monotony from our day jobs.

“By boosting productivity – a key UK weakness over the past decade – and so
 50 generating wealth, advances in robotics and AI should also create additional jobs in less automatable parts of the economy as this extra wealth is spent or invested.”

He added that the UK employment rate of just under 75% was at its highest level since modern records began in 1971, suggesting that advances in digital and other labour-saving technologies had been accompanied by job creation. He said it was
 55 not clear that the future would be different from the past in terms of how automation would affect overall employment rates.

The fact that it was technically possible to replace a worker with a robot did not mean it was economically attractive to do so and would depend on the relative cost and productivity of machines compared with humans, Hawksworth said. PwC
 60 expects this balance to shift in favour of robots as they become cheaper to produce over the coming decades. [...]

Opgave 1

**Besvar på dansk følgende spørgsmål til den engelske tekst.
Der lægges vægt på en præcis og sammenhængende besvarelse af hvert enkelt spørgsmål.**

- a) Hvilke konsekvenser kan indførelse af robotteknologi og kunstig intelligens få for ansatte i forskellige sektorer på det britiske arbejdsmarked ifølge en rapport fra PwC?
- b) Hvilke kompetencer vil være vigtige på arbejdsmarkedet i fremtiden?
- c) Hvorfor er kvinder i mindre grad end mænd i fare for at miste deres job?

Opgave 2

**Løs en af nedenstående opgaver på engelsk. Vælg *enten* opgave a) *eller* b).
Der lægges vægt på en fyldig og velstruktureret besvarelse, der tager udgangspunkt i den engelske tekst.**

- a) Comment on the increasing use of robots in various sectors of the labour market and discuss the advantages and disadvantages of introducing robotics and artificial intelligence for both employers and workers.

You may consider:

- employment/unemployment
- education and qualifications
- job satisfaction
- job opportunities

- b) Based on the text, comment on the following statement: "Automating more manual and repetitive tasks will eliminate some existing jobs but could also enable some workers to focus on higher value, more rewarding and creative work, removing the monotony from our day jobs". (p. 2 lines 46-48)

Opgave 3

Løs nedenstående opgave på engelsk. I besvarelsen inddrages oplysninger fra den engelske tekst. Der lægges vægt på en selvstændig og fyldig besvarelse med overholdelse af formalia.

Your name is Christian Kvist and you are a Danish student attending a study programme called "Robotics" at Aalborg University. One of your course topics is "Robots and AI" and you plan to write a project about this topic.

During the introductory week at the Department of Computer Science, you have heard about a report made by PwC London on technology and AI. You have become very interested in learning more about certain details in this report. Therefore, you contact Jon Andrews, who is Head of Technology and Investments at PwC. You ask him some questions about the results of the report in terms of employment in various sectors.

Furthermore, you would like Jon Andrews to briefly account for the recent developments within the field of robotics and AI and the use of robots in various sectors of the economy. You also inform him of some of the sectors you would like to apply for a job in when you finish your studies.

Finally, you inform him of your potential future interest in learning more about robotics and AI, possibly in England. Therefore, you would like to hear if Jon Andrews has any useful knowledge of study programmes there within the field of robotics and AI.

Make suitable opening and closing statements and use today's date.

Sender

Christian Kvist
Lærkely 7
9000 Ålborg

Recipient

Jon Andrews
1 Embankment Place
London
WC2N 6RH
England

Opgave 4

Oversæt følgende tekst til engelsk

Jon Andrews
1 Embankment Place
London
WC2N 6RH
England

Christian Kvist
Lærkely 7
9000 Ålborg
Danmark

18. december 2017

Mange tak for dit brev af 4. december. Det glæder mig, at du finder robotteknologi og kunstig intelligens interessant. Særligt inden for robotteknologi har der været en rivende udvikling i de senere år. Dette afspejles for eksempel inden for engros- og detailhandel, som er de to sektorer, der vil blive hårdest ramt i fremtiden.

Her i PwC har vi haft fokus på automatisering og anvendelse af robotter i flere år, og vi har foretaget en grundig analyse af disse områder. I rapporten har vi påpeget forskellige fordele og ulemper ved robotteknologi. Vi har undersøgt forskellige sektorer på det britiske arbejdsmarked og har fundet frem til, at uddannelses- og sundhedssektoren vil blive mindst ramt af den stigende automatisering.

Ingen kan forudsige helt, hvad fremtiden bringer, men det er et faktum, at der vil være et stigende fokus på at erstatte monotone og fysisk krævende job med robotter. Dette vil give overflødige medarbejdere mulighed for at opkvalificere sig og udvikle deres kompetencer. I sidste ende vil dette forhåbentligt føre til større jobtilfredshed på arbejdspladsen.

Hvis du engang i fremtiden ønsker at studere videre i London inden for robotteknologi og kunstig intelligens, kan jeg anbefale dig University of Sheffield. Du kan læse mere om universitetet på deres hjemmeside.

Jeg ønsker dig held og lykke med dit projekt. Hvis du har yderligere spørgsmål, er du velkommen til at kontakte mig på telefonnummer +44 (0)20 7804 9000.

Med venlig hilsen

Jon Andrews
Head of Technology and Investments, PwC

