

The AI jobs boom

By [Cliff Moyce](#)

Will AI be the keystone for the fourth industrial revolution?



There have been many press articles and white papers published in 2017 on the threat to jobs from Artificial Intelligence (AI). To what degree do the stories reflect reality and likely outcomes? I argue – not at all.

I maintain that AI will not only create job vacancies in a manner last seen in the internet boom years; but the growth will become exponential as AI triggers the Fourth Industrial Revolution (the convergence of the technological, physical, and biological). Resulting job vacancies will not only relate to core AI roles, but also all the other jobs that come from having successful – often new – companies in a booming economy. Jobs in operations, finance, logistics, sales, marketing etc.

A common misconception of the naysayers is that AI will do work currently done by people, and thus make said people redundant (Keynes's technological unemployment theory). The argument is incorrect because rather than doing the work that people do, AI does work that people cannot do with existing tools, or it helps them do current work better / easier / more accurately than they do it now. E.g. work that is done currently with existing tools like spreadsheets or algorithm based computer programs for planning and operations management in things like energy or food production. The whole point of paradigm shifts like that being wrought by AI is that it creates new organisations, jobs and markets. Can anyone think of a person who lost their job because of

PC's? Or spreadsheets? Who can count the number of new services, products, companies and roles that PC's and spreadsheets alone created?

Right now, three new major areas for AI are opening up: (1) deriving deep learning from structured and unstructured data to drive strategic planning for organisations of all types and sizes, including government departments (2) using Big Data tools to support operational risk management and operational planning; and (3) using AI to predict financial turbulence and to assess risk of financial contagion. AI and ML skills that are becoming highly sought after by employers include: adaptive software development; speech and face recognition; artificial neural networks, pattern recognition, deep learning, and Big Data.

In financial services and capital markets, AI techniques such as pattern recognition, machine learning, and fuzzy logic have underpinned for many years cyber-security tools; anti-money laundering and anti-sanctions busting products; and financial data parsing solutions. AI is also the bedrock of the RegTech (regulatory technology) revolution. Regtech not only plays a huge role in making reporting easier for firms, but it plays a more important role in managing inter- and intra- firm risk; thus, reducing the probability of the sort of financial contagion we saw in 2008.

Modelling and mitigating possible contagion between firms; between markets; and, between countries is incredibly difficult because of the enormous amount of data involved; the opaque nature of the data sources (due to much of it sitting in legacy systems); and a lack of normalisation. AI is cracking that problem, for which we should all be grateful as it protects livelihoods by creating confidence and stability. Nobody wants another crash. At the same time, Regtech is creating its own direct and indirect jobs boom. However, cyber-security remains the biggest driver of AI oriented job vacancies, with the ISACA (a non-profit information security advocacy group) predicting a global shortage of two million cyber security professionals by 2019.

You might be asking yourself 'if the outlook is so good, why are there so many negative stories?'. Fears about job losses from new technologies have been seen at every stage of human development. We can either call such fears normal, or we can wonder why we never learn. The invention of automated weaving looms that presaged the first industrial revolution was resisted by some as threatening jobs because less people (money and effort) would need to be employed to create the same amount of cloth. In reality, the demand for woven cloth increased beyond any expectation as costs plummeted; millions of direct and indirect jobs were created; and, new methods, tools and techniques were created from opportunities offered by automation (a paradigm shift). Same story with farming automation, and again with robotics in manufacturing and engineering. Robots were supposed to herald the end of people building cars, but more people now work in car construction world-wide than ever before as cost have dropped and demand soared.

The beneficial effects of decreasing cost married with increasing quality pluses and minuses effect were described perfectly in The Economist in 2016 where an article described how introducing software capable of analysing large volumes of legal documents automatically reduced the cost of searches but also increased demand for it. As a result, the number of legal clerks dealing with the demand (and who are using the software) increased by 15% over 14 years; despite many predicting the demise of legal clerks when the software was first invented.

So far, AI has created many more jobs than it has ever replaced; this will continue. Constellation Research predicts that the market for AI will be worth \$40 billion by 2015 and \$100 billion by 2020. Many of the jobs being created by AI are jobs that never existed before. Despite its

relative youth, we already take for granted the internet and so many of the business models and technologies that it spawned. E.g. e-commerce; mobile technology; and, services generated from the Internet of Things (e.g. remote home environment controls).

The story will be the same for AI, but it could grow into something far bigger as it will provide the keystone for the fourth industrial revolution. I.e. the convergence of the physical, biological and technological that will mark the fourth industrial revolution will create products, services, and jobs, some of which are unthinkable now as they will come from paradigm shifts. In the same way that the first three industrial revolutions created hundreds of millions of businesses and jobs, and uncountable economic value, so it will be with the AI led fourth industrial revolution. 2018 will be incredible for AI business and job creation, and it will just be the beginning.

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Original article can be found here: <https://www.itproportal.com/features/the-ai-jobs-boom/>