

https://faculty.psau.edu.sa/filedownload/doc-7-pdf-a154ffbcec538a4161a406abf62f5b76-original.pdf

# **Artificial** Intelligence

«Strong» AI

- Computers thinking at a level that meets or surpasses people
- Computers engaging in abstract reasoning and thinking.

This is **not** what we have today

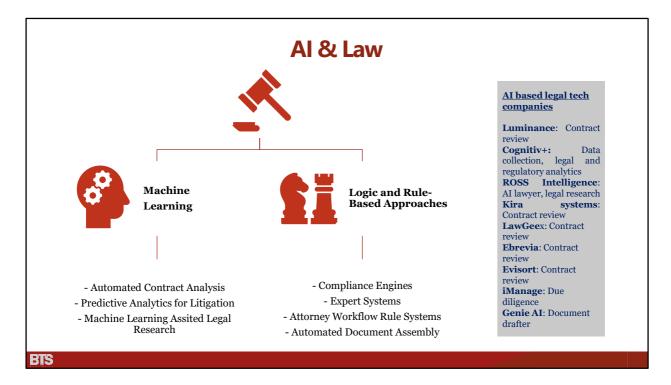
«Weak» Pattern-Based AI

- Computers solve problems by detecting useful patterns
- Has been used to automate many processes today; driving, language translation etc.

This is the **dominant mode** of AI today

BIS

# Machine Learning A subset of AI that includes abstruse statistical techniques that enable machines to improve at tasks with experience Ex) Self-Driving Vehicles, Automated Recommendations, Translation Artificial Intelligence Any technique that enables computers to mimic human intelligence Other learning techniques; Logic and Rules-Based Approach Other learning techniques; Logic and Rules-Based Approach -Representing processes or systems using logical rules -Top-down rules are created for computer -Can be used to automate processes ex) «TurboTax» personal income tax laws



### Al based legal tech companies

**Luminance:** Contract review

Cognitiv+: Data collection, legal and regulatory analytics

**ROSS Intelligence**: Al lawyer, legal research

Kira systems: Contract review

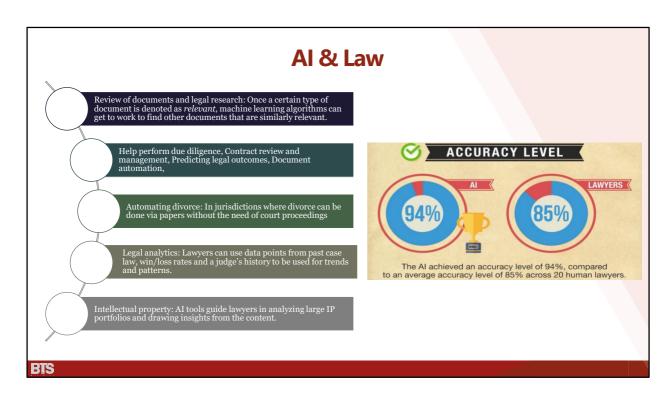
**LawGeex**: Contract review

Ebrevia: Contract review

**Evisort:** Contract review

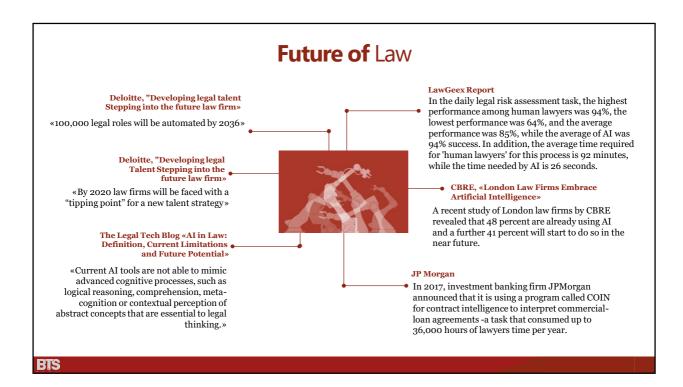
iManage: Due diligence

Genie AI: Document drafter



https://emerj.com/ai-sector-overviews/ai-in-law-legal-practice-current-applications/

https://www.youtube.com/watch?time\_continue=111&v=UbzEltssoRk https://interestingengineering.com/ai-vs-lawyers-the-future-of-artificial-intelligence-and-law



https://www.forbes.com/sites/bernardmarr/2018/05/23/how-ai-and-machine-learning-are-transforming-law-firms-and-the-legal-sector/#2860fae632c3 https://www.computerworld.com/article/3412357/how-ai-is-impacting-the-uks-legal-sector.html

Computerworld-How AI is impacting the UK's legal sector

A recent study of London law firms by CBRE revealed that 48 percent are already using AI and a further 41 percent will start to do so in the near future.

DIY lawyers and chatbots that ask users a series of simple questions and then guides users through process.

I.e. DoNotPay is an app that focuses on providing those who cannot afford legal support with advice on suing corporations and navigating complex bureaucracies. After you've inputted the answers to predetermined questions, the app will draw up the documents that you'll need to send to the courthouse to become a plaintiff, and will generate a script for you to read from if you need to attend in person. It also lets users to keep 100% of the money they win in court.

In 2017, investment banking firm JPMorgan announced that it is using a

program called COIN for contract intelligence to interpret commercial-loan agreements -a task that consumed up to 36,000 hours of lawyers time per year. Of the London law firms already employing AI, 63 percent of firms are using it for legal document generation and review.

Billing and practice management automation

According to a 2018 CBRE study, 32% of London-based law firms are already using AI for administrative legal support.

Big data analytics to better determine the possible outcomes of cases, develop winning legal strategies, forecast litigation costs and etc.

Due diligence, making the process more efficient and accurate

42% of London based law firms are using AI to undertake due diligence

https://www.legaltechnology.com/latest-news/deloitte-insight-100000-legal-roles-to-be-automated/

https://www2.deloitte.com/uk/en/pages/audit/articles/developing-legal-talent.html !!

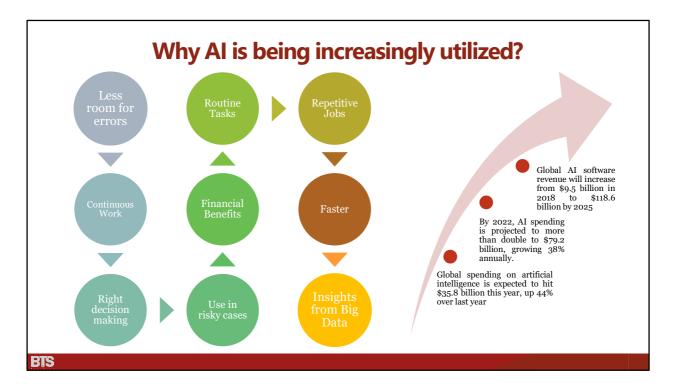
https://legal-tech-blog.de/ai-in-law-definition-current-limitations-and-future-potential

https://interestingengineering.com/ai-vs-lawyers-the-future-of-artificial-intelligence-and-law

LawGeex compared the performance of 20 experienced United Nations lawyers to their AI systems and published a 40-page report.

**Results:** In the daily legal risk assessment task, the highest performance among human lawyers was 94%, the lowest performance was 64%, and the average performance was 85%, while the average of AI was 94% success. In addition, the average time required for 'human lawyers' for this process is 92 minutes, while the time needed by AI is 26 seconds.





### **Less Room for Errors**

As decisions taken by a machine are based on previous records of data and the set of algorithms, the chances of errors reduce. This is an achievement, as solving complex problems that require difficult calculation, can be done without any scope of error.

Have you heard of digital assistants? Advanced business organizations use digital assistants to interact with users, something that helps save them time. This helps businesses fulfil user demands without keeping them waiting. They are programmed to give the best possible assistance to a user.

### **Right Decision Making**

The complete absence of emotions from a machine makes it more efficient as they are able to take the right decisions in a short span of time. The best example of this is its usage in healthcare. The integration of AI tools in the healthcare sector has improved the efficiency of treatments by minimizing the risk of false diagnosis.

### **Implementing AI in Risky Situations**

Certain situations where human safety is vulnerable, machines that are fitted with predefined algorithms can be used. Nowadays, scientists are making use of complex machines to study the ocean floor where human survival becomes difficult.

This is one of the biggest limitations that AI helps to overcome.

### **Can Work Continuously**

Unlike humans, machine does not get tired, even if it has to work for consecutive hours. This is a major benefit over the humans, who need rest time to time to be efficient. However, in the case of machines, their efficiency is not affected by any external factor and it does not get in the way of continuous work.

https://www.bbntimes.com/en/companies/pros-and-cons-of-artificial-intelligence https://www.wsj.com/articles/worldwide-ai-spending-to-hit-35-8-billion-in-2019-11552516291

https://www.mediapost.com/publications/article/333013/ai-spending-projected-to-reach-358-billion-this.html

https://content.wisestep.com/advantages-disadvantages-artificial-intelligence/

### **Advantages of Artificial Intelligence:**

Artificial intelligence is complex in nature. It uses a very complicated mixture of computer science, mathematics and other complex sciences. Complex programming helps these machines replicate the cognitive abilities of human beings.

### 1. Error Reduction:

Artificial intelligence helps us in reducing the error and the chance of reaching accuracy with a greater degree of precision. It is applied in various studies such as <u>exploration of space</u>.

Intelligent robots are fed with information and are sent to explore space. Since they are machines with metal bodies, they are more resistant and have a greater ability to endure the space and hostile atmosphere.

They are created and acclimatized in such a way that they cannot be modified or get disfigured or breakdown in a hostile environment.

### 2. Difficult Exploration:

Artificial intelligence and the science of robotics can be put to use in mining and other fuel exploration processes. Not only that, these complex machines can be used for exploring the ocean floor and hence overcome the human limitations.

Due to the programming of the robots, they can perform more laborious and hard work with greater responsibility. Moreover, they do not wear out easily.

### Daily Application:

Computed methods for automated reasoning, learning and perception have become a common phenomenon in our everyday lives. We have our lady <u>Siri</u> or <u>Cortana</u> to help us out.

We are also hitting the road for long drives and trips with the help of GPS. The smartphone is an apt and everyday example of how we use artificial intelligence. In utilities, we find that they can predict what we are going to type and correct the human errors in spelling. That is machine intelligence at work.

When we take a picture, the artificial intelligence algorithm identifies and detects the person's face and tags the individuals when we are posting our photographs on social media sites.

Artificial Intelligence is widely employed by financial institutions and banking institutions to organize and manage data. Detection of fraud uses artificial intelligence in a smart card based system.

### 4. Digital Assistants:

Highly advanced organizations use 'avatars' which are replicas or digital assistants who can actually interact with the users, thus saving the need for human resources.

For artificial thinkers, emotions come in the way of rational thinking and are not a distraction at all. The complete absence of the emotional side, makes the robots think logically and take the right program decisions.

Emotions are associated with moods that can cloud judgment and affect human efficiency. This is completely ruled out for machine intelligence.

### 5. Repetitive Jobs:

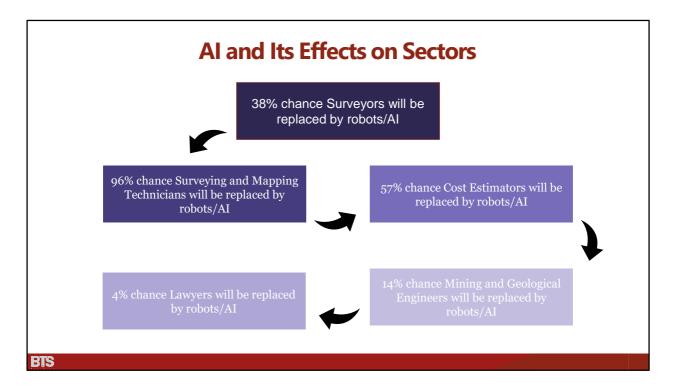
Repetitive jobs which are monotonous in nature can be carried out with the help of machine intelligence. Machines think faster than humans and can be put to multitasking. Machine intelligence can be employed to carry out dangerous tasks. Their parameters, unlike humans, can be adjusted. Their speed and time are calculation based parameters only.

When humans play a computer game or run a computer-controlled robot, we are actually interacting with artificial intelligence. In the game we are playing, the computer is our opponent. The machine intelligence plans the game movement in response to our movements. We can consider gaming to be the most common use of the benefits of artificial intelligence.



https://www.pwc.com/hu/hu/kiadvanyok/assets/pdf/impact of automation on jobs.pdf

(otomasyon olduğu için –spesifik AI değil- koymadım ancak eklenebilir) <a href="https://www2.deloitte.com/content/dam/insights/us/articles/5136\_HC-Trends-2019/DI\_HC-Trends-2019.pdf">https://www2.deloitte.com/content/dam/insights/us/articles/5136\_HC-Trends-2019/DI\_HC-Trends-2019.pdf</a>



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Remit Consulting's Andrew Waller said "With 88% of basic tasks being suitable for automation via emerging technologies we can expect to see far-reaching changes in our profession in the next few years... Surveying practitioners that adapt their approach and utilise the new technologies will be able to bring added value to their clients through increased efficiencies."

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- A change in the skillset of surveyors, who are likely to become either data scientists or client managers.

Kaynak 2: https://willrobotstakemyjob.com/17-1022-surveyors

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The Internet of Things (the interconnection via the internet of computing devices

embedded in everyday objects enabling them to send and receive data) is also having a significant impact on surveying work. Thermographic / thermal imaging cameras, leak detection systems that are wireless units and can be linked to smart home devices and smartphones to allow constant monitoring can be given as some examples for AI in surveying industry.

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# **AI & Surveying Industry**



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- The impact of automation is likely to be especially disruptive in the areas of lease management, valuation along with property, asset and facilities management.
- Surveys suggest that the most likely area for automation was considered the **collection of rent**, while the least likely candidate for automation was thought to be the **acquisition and disposal of property**.
- Survey also took into account utilization of such developments as increased sensors deployed under 'Internet of Things'.

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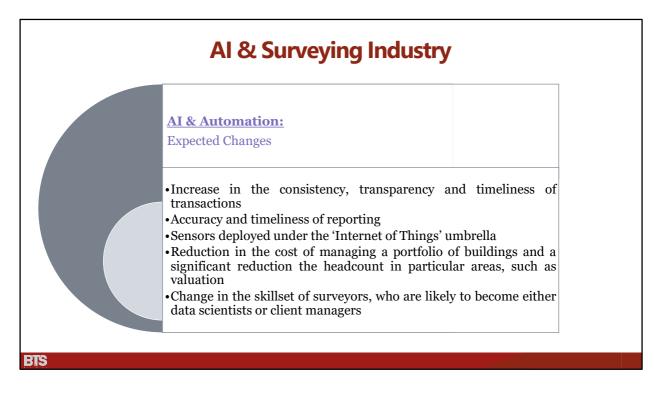
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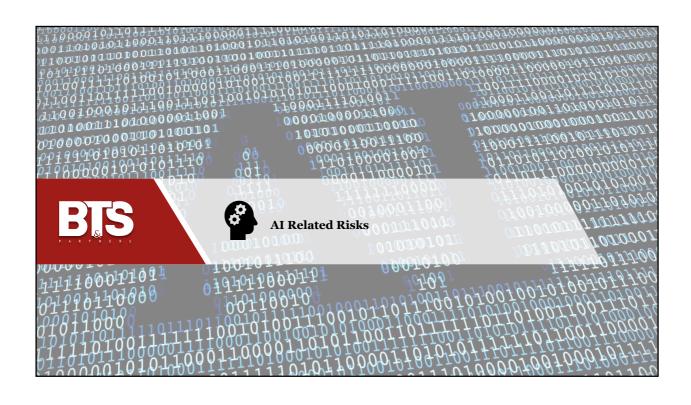
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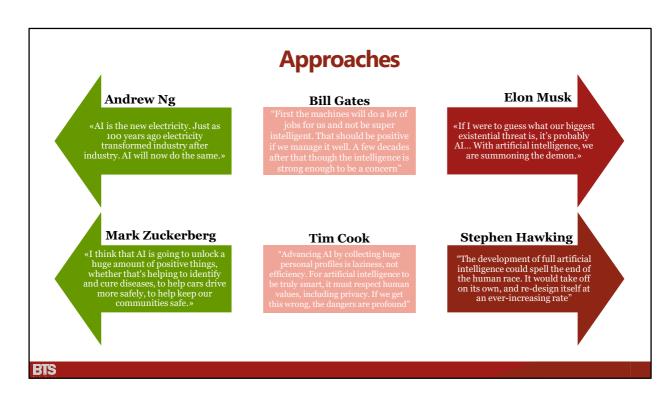
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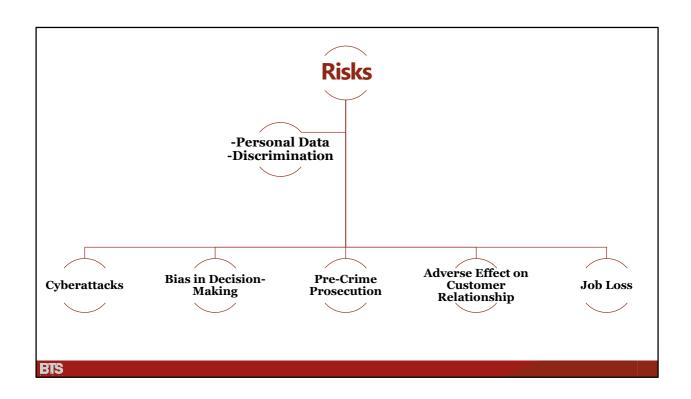
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https://www.analyticsindiamag.com/10-well-known-personalities-fear-rise-artificial-intelligence/



## **Risks**

Processing of Personal Data

- · Fairness principle in GDPR
- The model's result may be incorrect or discriminatory if the training data renders a biased reality, or if it has no relevance to the area in question.
- The model must not emphasise information relating to racial or ethnic origin, political opinion, religion or belief, trade union membership, genetic status, health status or sexual orientation if this would lead to arbitrary discriminatory treatment.

Cyberattacks

• Inevitable risk given the fact that a large volume of sensitive information is shared during these processes

BIS

### 1. Processing of Personal Data:

https://www.datatilsynet.no/globalassets/global/english/ai-and-privacy.pdf

### Fairness principle in the GDPR:

And yet algorithms and models are no more objective than the people who devise and build them, and the personal data that is used for training. The model's result may be incorrect or discriminatory if the training data renders a biased picture reality, or if it has no relevance to the area in question. Such use of personal data would be in contravention of the fairness principle.

This principle requires all processing of personal information to be conducted with respect for the data subject's interests, and that the data be used in accordance with what he or she might reasonably expect. The principle also requires the data controller to implement measures to prevent the arbitrary discriminatory treatment of individual persons. The Regulation's preface describes the use of suitable mathematical or statistical procedures as possible measures here.

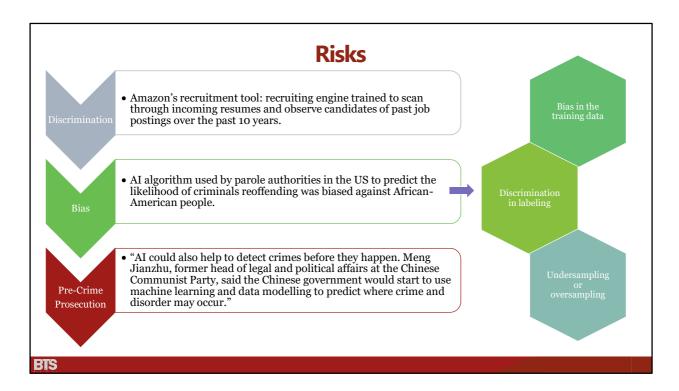
This would not, however, be sufficient of itself to ensure compliance with the principle. The model must also be trained using relevant and correct data and it must learn which data to emphasise. The model must not emphasise information relating to racial or ethnic origin, political opinion, religion or belief, trade union membership, genetic status, health status or sexual orientation if this would lead to arbitrary discriminatory treatment.

Other problems associated compliance with the GDPR requirements.

### 2. Bias resulting in discrimination

https://www.forbes.com/sites/nicolemartin1/2018/12/13/are-ai-hiring-programs-eliminating-bias-or-making-it-worse/#175573e122b8

Recently, Amazon stopped its new <u>recruitment tool</u> after finding out that the system they had built was showing gender bias against women. The recruiting engine was trained to scan through incoming resumes and observe candidates of past job postings over the past 10 years.



### 1. Cyberattacks

http://www.iberianlawyer.com/latin-america/analysis/8271-law-firms-fears-about-risks-posed-by-using-artificial-intelligence-intensifying

"the use of such technology is also giving lawyers sleepless nights as they worry about the potential threat it poses as it leaves firms increasingly vulnerable to cyberattacks by hackers"

Such risks are inevitable given the fact that information is shared during legal processes and, consequently, law firms are a particularly attractive target for hackers, according to panellists at the event, which was held in collaboration with Greenberg Traurig and EY Law.

https://www.forbes.com/sites/bernardmarr/2019/01/29/3-steps-to-tackle-the-problem-of-bias-in-artificial-intelligence/#16e708f07a12

a <u>study</u> found that an AI algorithm used by parole authorities in the US to predict the likelihood of criminals reoffending was biased against black people.

https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm

### 3. Pre-Crime Prosecution

https://www.worldgovernmentsummit.org/observer/articles/could-an-ai-ever-replace-a-judge-in-court

"Al could also help to detect crimes before they happen. Meng Jianzhu, former head of legal and political affairs at the Chinese Communist Party, said the Chinese government would start to use machine learning and data modelling to predict where crime and disorder may occur."

https://www.independent.co.uk/news/world/asia/china-ai-crimes-before-happen-artificial-intelligence-security-plans-beijing-meng-jianzhu-a7962496.html

This can be a tool for opression

https://www.ibm.com/blogs/systems/tackling-bias-in-ai/

### **Risks**

Customer Relationship  Customer relationship becoming less personal and negatively affected as a result



- "...automated systems that unthinkingly cut bills can lead to unintended consequences»
- "Dutifully, the software puts a flag next to all line items that contain key combinations of words, UTBMS task codes, and timekeeper roles. Is the description adequate? Was the time reasonable? Was authorization actually given? The software has no idea."

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### 4. Adverse effect on lawyer-client relationship:

<u>www.iberianlawyer.com/latin-america/analysis/8271-law-firms-fears-about-risks-posed-by-using-artificial-intelligence-intensifying</u>

Al use by law firms is expected to increase substantially in the short term, with an estimated 95 per cent of law firms' interactions with clients expected to involve Al by the year 2025. The increased use of Al is an evident trend across the region amid a shift, across all sectors, towards the greater use of digital tools to facilitate day-to-day business, such as data management and cloud computing. However, there is still a certain degree of scepticism among law firms and clients, attendees heard. One concern is that, given Al's ability to reduce the time spent scanning and preparing documents, and the subsequent cut in costs, the lawyer-client relationship could be become less personal and negatively affected as a result. Consequently, technology must be seen as a tool for improving processes but not as a replacement for human communication, participants argued.





- Office for National Statistics: 1.5 million people in England are at high risk of losing their jobs to automation
- McKinsey: By 2030; 60% of jobs will be made up of tasks that are at least 30% automatable, but less than 5% of jobs will be fully automatable.
- PWC: Industries most at risk; Catering industry, entertainment, manufacturing, construction, wholesale and retail trade, health and social work, education, property, housing and estate, legal profession

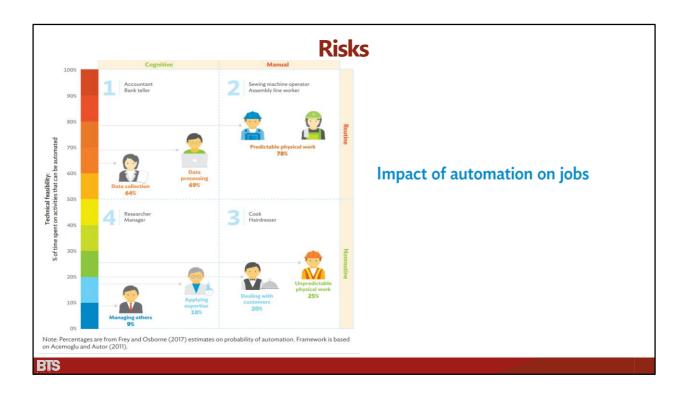
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https://www.bbc.com/news/business-47691078

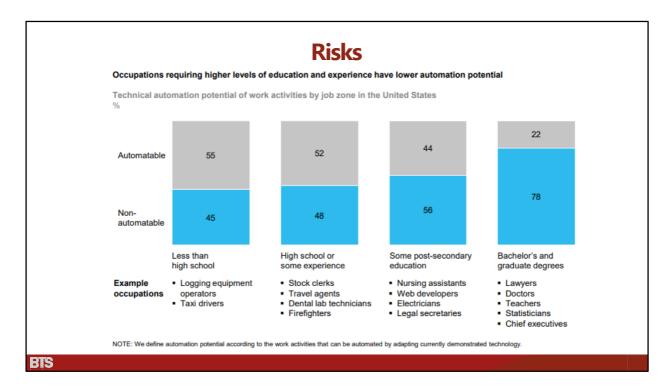
https://www.skynettoday.com/editorials/ai-automation-job-loss

https://www.mckinsey.com/~/media/mckinsey/featured%20insights/future%20of% 20organizations/what%20the%20future%20of%20work%20will%20mean%20for%2 0jobs%20skills%20and%20wages/mgi-jobs-lost-jobs-gained-report-december-6-2017.ashx

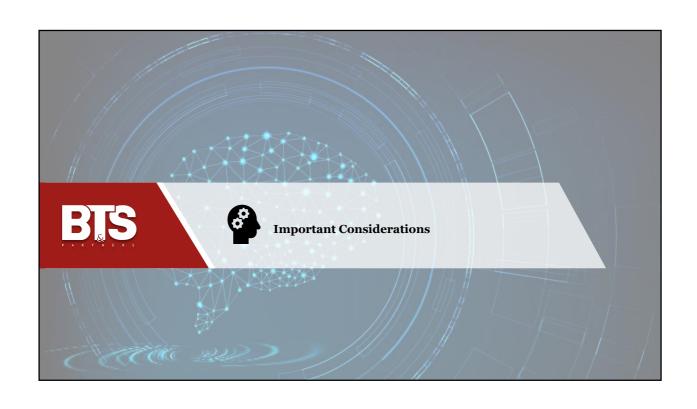
https://thebossmagazine.com/jobs-lost-ai-automation/

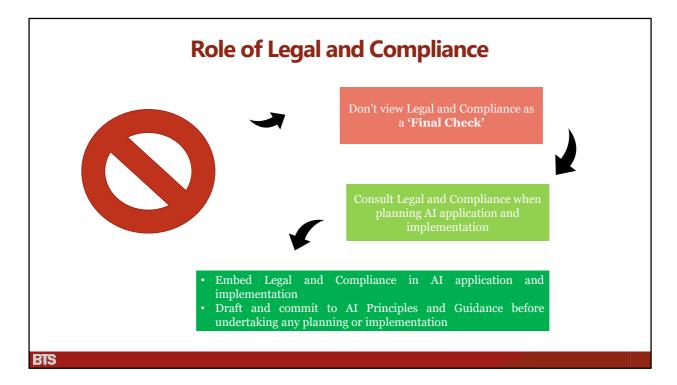


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Kaynak 1: <a href="https://www.netyield.co.uk/13-news/98-artificial-intelligence-insurveying">https://www.netyield.co.uk/13-news/98-artificial-intelligence-insurveying</a>

Artificial Intelligence (AI) could change the real estate industry over the next decade as it has the potential to affect almost 90% of the core tasks undertaken by surveyors, according Remit Consulting in a report published by the RICS.

The RICS Insights Report, "The Impact of Emerging Technologies on the Surveying Profession" used Remit Consulting's 'Process Model' to look at the skills and specialisms of surveyors and how new technology might affect them. It identified a set of 43 basic tasks and of these, almost half of them, eighteen, were found to exhibit a high degree of vulnerability to automation over the next ten years. A further twenty tasks showed a significant degree of vulnerability over the same period.

Remit Consulting's Andrew Waller said "With 88% of basic tasks being suitable for automation via emerging technologies we can expect to see far-reaching changes in our profession in the next few years... Surveying practitioners that adapt their approach and utilise the new technologies will be able to bring added value to their clients through increased efficiencies."

Remit Consulting undertook a survey to solicit opinion based upon the likely impact of technology in different areas such as data, valuation, lease preparation and management, rent and service charge collection along with the acquisition and disposal of investment property. The survey suggested that the most likely area for <a href="mailto:automation"><u>automation</u></a> was considered the collection of rent, while the least likely candidate for automation was thought to be the acquisition and disposal of property. The report suggests that the impact of automation is likely to be especially disruptive in the areas of lease management, valuation along with property, asset and facilities management.

The report predicts that the changes will be seen in different ways:

- An increase in the consistency, transparency and timeliness of transactions;
- A step change in the accuracy and timeliness of reporting;
- An explosion in the number of sensors deployed under the 'Internet of Things' umbrella will increase the visibility and responsiveness of all buildings and facilitate remote facilities management;
- A reduction in the cost of managing a portfolio of buildings and a significant reduction the headcount in particular areas, such as valuation;
- A change in the skillset of surveyors, who are likely to become either data scientists or client managers.

Kaynak 2: https://willrobotstakemyjob.com/17-1022-surveyors

Will "Surveyors" be replaced by AI & Robots?

There is a small chance this occupation will be replaced by robots/AI. This is further validated by our poll, which suggests a 46% chance of automation within the next 2 decades.

### Kaynak 3:

https://www.designingbuildings.co.uk/wiki/Artificial intelligence and surveying

The advantages for the drone piloting surveyor are significant. No longer are high level roof inspections tricky, potentially dangerous or even downright impossible. A drone provides clear, high quality imagery and video footage without the surveyor leaving the ground. The benefits: greater accuracy of reporting, potential cost saving to clients through improved efficiency, improved health & safety and fun to use too.

The Internet of Things (the interconnection via the internet of computing devices

embedded in everyday objects enabling them to send and receive data) is also having a significant impact on surveying work. Thermographic / thermal imaging cameras, leak detection systems that are wireless units and can be linked to smart home devices and smartphones to allow constant monitoring can be given as some examples for AI in surveying industry.

2- Use of AI in land dispute resolutions (Land Dispute özelinde bir şey bulmamakla birlikte çalışmanın odağı genel olarak uyuşmazlık çözümünde AI kullanımı olmuştur)

Kaynak 1: <a href="http://mediationblog.kluwerarbitration.com/2018/08/30/might-artificial-intelligence-mean-alternative-dispute-resolution/">http://mediationblog.kluwerarbitration.com/2018/08/30/might-artificial-intelligence-mean-alternative-dispute-resolution/</a>

Lex Machina, a Data-mining computer programme created at Stanford University in 2006, has been used to look for patterns to help with predicting the progress of cases in the US. In November 2017 there were news headlines about 'Case Cruncher Alpha', a project at Cambridge University, where an AI system predicted the outcome of 775 financial ombudsman cases with 86.6% accuracy. A panel of 100 experienced lawyers assembled to perform the same task achieved 66.3%. Today we now have the emergence of 'Smart Contracts' – agreements stored across computers (a process known as blockchain) and which are defined by computer code rather than traditional written clauses.

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Al 'robot' lawyer and chatbot system, DoNotPay, assists people in legal issues such as appealing parking tickets, claiming for delayed flights, claiming for PPI, applying for emergency housing and claiming asylum, without paying legal fees. The application can be used with a large range of devices making it easy for anybody to access justice inexpensively.

# **Navigating Ethical Concerns**



- Identifying the most present Ethical Risks in relation to planned AI implementation
- · Legal evaluation of Ethical Risks
- Culture and industry evaluation of Ethical Risks

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