

The AI Journal

AI IN A POST- COVID-19 WORLD





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FOREWORD

Since The AI Journal launched in February 2020, we have witnessed businesses large and small deal with the many challenges brought by COVID-19. It's our goal to help businesses dealing with AI-enabled technologies to make informed decisions, which is why it gives us great pleasure to provide you with this report.

I am a firm believer that from challenges rise opportunities, and in this report I am pleased to say that there is much to look forward to from AI. I am confident that ultimately the changes brought by AI will improve people's lives.

AI can be a force for good in this new and sometimes scary world that we are stepping into.

It can help us to be more efficient, it can help us to develop new products and services, and it can help us to change our business models for the better.

There is also a note of caution with the challenges faced now and the ones that lie ahead – many of the sticking points that we saw before the pandemic still remain, with the key issues being a lack of support at board level, legacy technologies, and an underskilled workforce. Later in this report we have identified six core solutions to the challenges faced by AI, that we need to tackle in order to progress, learn, develop, and move forward.

Here at The AI Journal, we want to contribute towards a positive future for AI; to be a voice for the community; and to enable businesses to make informed decisions to add greater value to their customers.

It's for these reasons that it gives us great pleasure to provide you with our findings on the perceptions of AI in this report.

Thanks so much to everyone who took the time to give their views and those who have supported this report, we truly appreciate it.

The AI Journal

Tom Allen, Founder, The AI Journal

METHODOLOGY

This report is based on an online survey of AI experts and practitioners, and business leaders in both tech and non-tech organisations, carried out by The AI Journal during July and August 2020. Further input was sought from survey respondents and other members of the AI community in compiling this report.

INTRODUCTIONS

The world has been thrust into a new way of working, both in our personal lives and within the business world. As a human race we look to ways in which we can adapt when facing new, challenging and confusing times, and naturally in today's age we turn to technology. Everyone has been affected by what's happened and it's clear that during this time we have had to rely heavily on technology – more specifically Artificial Intelligence.

AI has not only helped us cope with COVID-19 in various ways from medical advancements to still being able to communicate with our families, but has helped to give that push we needed to adopt and embrace the technology.

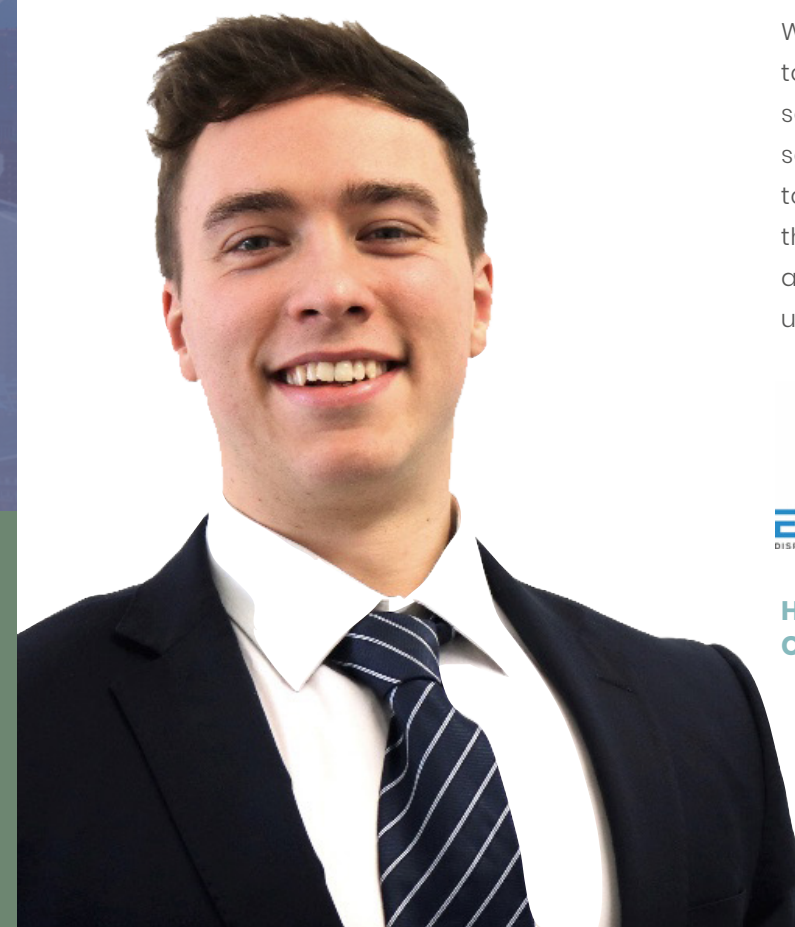
The AI Journal has put together this report to outline exactly what the impact has been and how this changes the opportunities and landscape for AI in the future. There are a range of factors which are still being addressed to this very day, around ethics, training and education, security and much more. This report provides a great insight into these key topics and suggests ways in which we tackle and approach them, ensuring successful use and integration of the technology.

We, at Edge Tech, have seen first-hand the changes that COVID has had in the AI space from a recruitment and hiring perspective.

We have worked with clients during this time to ensure they have the best skills available so that they can deliver great solutions and services right across the globe. We are proud to have contributed to this report and hope that it provides the readers with useful insights and information about AI and how it can be utilised to its full potential.



Harrison Goode
Co-founder, Edge Tech



AI research has endured a bumpy journey, surviving the 'AI Winter'. Although some excellent AI applications existed, it remained 'niche' and untrusted. Recently AI has experienced a renaissance and become mainstream.

Arguably there are three types of Artificial Intelligence. "Real", interested in machine sentience; "Applied", using AI techniques on real-world problems – computer algorithms addressing problems which, if performed by people, would require intelligence; and finally, "Marketing", where mystique is added to otherwise dull software and propositions.

The best-known aspect of AI is machine learning. However, AI isn't just machine learning, but also includes natural language understanding, planning, search space exploration, adversarial search, and more. Applied AI is now mainstream and plays a huge part in driving real-world innovation.

Many businesses responded to the COVID-19 crisis with rapid innovation. The judicious application of AI techniques can allow the development of new products and services, or new ways of delivering existing offerings. Perhaps because of this, AI has thrived during lockdown, and is therefore being used in more consumer-focused functions. For example, HelloDone is using AI to implement train e-ticketing and solving e-commerce logistical challenges.

Having worked for several years in AI and natural language, on projects from Planetary Landers to fraud detection and the conversation agents developed at HelloDone, it is encouraging to see the potential positive benefits that AI will bring in a post-COVID economy outlined in this report.

Of course, AI's capability and future is not limited to fighting the pandemic. Arguably what COVID-19 has done for AI is provided a stimulus to its growth.

HelloDone remains positive about the future of AI and strongly agrees with the conclusions and sentiment presented in this report.

Ultimately, applied AI is a horizontal, enabling technology. To ensure that it brings benefits that are shared by the many, rather than reducing employment, is a challenge for government and industry.

HelloDone

Andrew Lea, Head of AI, HelloDone

This timely report about the future of Artificial Intelligence in a post-COVID-19 world shares invaluable trends and industry views. There is no doubt that AI can bring huge benefits in terms of productivity gains, performance enhancements and increased competitiveness of companies and industries globally.

AI has the potential to impact every sector of the economy and most of our daily lives as consumers. AI will improve the way businesses interact with clients by delivering more personalised products and services. AI can also support better decision making from the board room to all levels of the organisation. As a result of COVID-19 we have seen accelerated digital transformation across many businesses and expect a faster adoption of data technologies and AI going forward.

When we wrote The AI Book, published by Wiley and crowd-sourced by FINTECH Circle's global ecosystem of experts, it was very important to us to not only share our excitement about the future of AI but also our concerns about significant challenges ahead including the importance of ethics, trust and the difficult role for regulators who have to play a balancing act between keeping up with latest technologies to protect consumers while at the same time not being seen as restraining innovation.

This study by The AI Journal provides ample views

to show diverse stakeholder perspectives, their hopes and concerns for our future. Resulting unemployment is a key concern. While previous automation cycles led to job losses among blue-collar work, AI has the potential to reduce higher-educated, white-collar work on top of the economic impact of job losses triggered by the coronavirus crisis.

The key thing to remember is that AI is only a tool, how it is being used and in which governance framework it will be applied will determine its usefulness for individuals, businesses and societies as a whole. There is no doubt that AI will increase productivity by decoupling business growth from headcount growth.

Section 3 of this report provides valuable solutions on how to benefit from AI, including the importance of education and training, and ethics and regulation. There is strong demand for an AI regulator and AI ethics boards for all organisations who plan to implement AI-driven decision-making at scale, to ensure full transparency about the data used and the logic applied before an outcome is reached.

The use of AI should never lead to a 'black box' approach where stakeholders cannot understand how decisions have been made or where bias leads to wrong decision-making or discrimination at scale.

I would like to thank all contributors to this important study and The AI Journal for raising awareness about this topic which will impact the way we live our personal and professional lives, going forward.

Best wishes,



Susanne Chishti, CEO, FINTECH Circle and Bestselling Co-Editor of The FINTECH Book Series including The AI Book, published by Wiley in 2020



SECTION 1: AI'S POST-COVID-19 OPPORTUNITIES

What will be the leading opportunities provided by AI, as the world deals with COVID-19?

It will make business processes more efficient

74%

It will create new business models

55%

It will enable the creation of new products and services

54%

It will enhance remote ways of working to enable more businesses to survive and thrive

45%

It will help to develop technologies focused on non-COVID health issues

45%

It will help organisations to better manage their working environments and employees

34%

It will help to fight the COVID-19 pandemic

31%

It will enhance relationships with clients/customers/stakeholders

24%

Other

4%

"I am positive that AI will play a role in driving the economy back up, post-COVID. However, I am also concerned it will not do much to battle unemployment. It will simply continue to help increase productivity by decoupling business growth from headcount growth."

An innovation head at a technology consultancy

"The speed and the volume of data in cyberspace is greater than before the pandemic and AI can help with understanding, checking and predicting the data. AI has the potential to make sense of large amounts of data that exist everywhere but has never been collectively studied as a whole. This can help organisations make holistic and informed decisions that are based on facts in a timely manner."

Peggy K. Tsai, VP of Data Solutions, BigID

"How AI is harnessed depends on business leaders. If it is only used as a means to boost the bottom line, it is likely to have negative impact in the long term. However, if it is used to address the issues tied to social inequality, it is likely to have a positive long term impact."

A solutions architect at a leading technology firm

AN EXPECTATION OF EFFICIENCY AND GROWTH

While the majority of business leaders (72%) feel positive about the role AI will play in the post-COVID-19 economy, there are a number of differing views on what exactly that role will be.

Whether it's long email chains or complex finance and procurement systems, the drain on resources caused by inefficient processes in

some business can be huge - so it is no surprise that 74% of those respondents hope AI can make business processes more efficient.

And who could have predicted a few years ago that AI would be changing industries like transportation and healthcare for good? More than half of respondents see AI as likely to

create entirely new business models, and the same number again feel it could enable the creation of new products and services.

It is difficult to imagine what the next game-changing business might be - but it's not too hard to imagine that it might have AI at its heart.



SECTION 2: BARRIERS TO AI ACHIEVING ITS POTENTIAL

What are the main barriers to AI achieving its potential in the post-COVID-19 world?

A lack of understanding or commitment towards investing in AI at board level

59%

Legacy processes and technologies within businesses that do not support AI

50%

A lack of relevant skills within the workforce

48%

Hype around AI that risks distracting or misleading would-be adopters

42%

Ethical concerns

38%

Distrust at a consumer level

36%

A lack of strong infrastructure technology at a national level

31%

A scarcity of relevant data

26%

A lack of government support

24%

Other

6%

"False positives and data gaps. COVID-19 creates a major break in time series data. AI systems excel at identifying correlations/co-variances. But if trained on pre-pandemic data, AI systems can generate inappropriate conclusions concerning causation from observed correlations. This will undermine their credibility. So it is crucial to curate training data."

Barbara C. Matthews, Founder and CEO, BCMstrategy, Inc.

"There's not so much a scarcity of relevant data as a danger of misuse of the data available, resulting in inaccurate models. In order for models to be as accurate as possible, all relevant data must be included. We must allow the model to lead us, not attempt to lead the model."

Tony O'Neill, Customer Success Manager and Automation Consultant, Alphalake AI

"People do not understand its limitations and clearly do not know its strengths."

Shelly Palmer, CEO, The Palmer Group

CONCERNS AT BOARD LEVEL

Respondents have firmly pointed out where their concerns lie – at board level. A lack of understanding or commitment towards investing in AI in the C-suite is feared by 59% of respondents.

With CEOs and the C-suite facing so many competing demands, trying to get these decision makers

to truly engage with AI and its potential will be a challenge. Part of this challenge can be met with the solutions proposed in the following section.

Alongside this, the AI community is clear that trying to get around legacy processes and technologies, and a lack of relevant

skills within the workforce are major challenges, which will also require creative solutions.

At their heart is communication – ensuring that AI is described in realistic, practical terms, avoiding the misleading hype seen too often, is clearly key to AI winning hearts and minds.



SECTION 3: THE LEADING SOLUTIONS

We asked business and technology leaders – both from within the AI world and outside it – for their views on how the barriers to AI's support of growth might be avoided. Here are the six key potential solutions that emerged.



1. Training and Education

There is a clear sense that there is no unified public understanding of AI's definition, nor of its capabilities. Within businesses, opinions can all too frequently be formed based on badly integrated technologies and a lack of understanding about how it can help.

Many have called for a better range of training and education schemes from the government. Education needs to start at school level, where the process of demystifying AI and making it less intimidating can begin. Furthermore, AI needs to be covered by more universities and a broader range of courses.

But employers also need to be providing opportunities for upskilling to allow their employees to gain a better understanding of AI at all levels of the business. Indeed, there is real need for education on AI and its applications to be provided to the C-suite.



2. Communicate the positive

Positive communications are integral to AI's successful future. Against a backdrop of media misrepresentation and hype, AI experts are calling for case studies of successes for the technology, providing positive examples of where it has brought change and improvement focused on people's real needs.

Work specifically needs to be done to challenge the generalisation that AI is unethical and a security risk. A broader story needs to be told about the opportunity for AI to help get the economy back on track. By providing access to relevant information, a simplification of the benefits, and examples of usability for the general public, we might begin to see an improved reputation for AI.



3. Ethics and regulation

The twin issue of ethics and regulation needs to be dealt with. There continues to be concern over inbuilt AI bias, with one respondent calling for "meticulous curation of training data to avoid inadvertently introducing bias or irrelevant components that can skew AI processing outcomes". Users of AI need to ensure that datasets actually represent the population and are not biased.

Some have called for a consensus on AI-related policies that protect human rights before they protect the agenda of tech companies.

The development of a dedicated AI regulator or advisory commission is widely supported, as is some form of regulatory framework for consumer data management, ownership and consumption. Alternatively, there is enthusiasm for an AI-focused membership association with a strong code of conduct and ethical requirements for businesses to adhere to.

"AI education for the consumer is key to removing the stigma that AI is just for robotics or advanced technology. Education will help people to realise that AI can be used in everyday processes. Like buying train tickets, shopping online and so on."

Miles McKechnie, Consultant, Montfort Communications

"By focusing on practical AI applications that generate meaningful business results. Help them find the appropriate use cases, collect data, and start using AI in practice. Offer pre-trained models that reduce barriers to entry for adoption."

Sophia Sembai, Product Marketing Manager, UiPath

"The industry must work to better educate itself, business leaders and government workers that AI is not simply one technology. This will, in turn, reduce the view of it as a panacea and remove some of the hype."

Olly Cogan, CEO, Alphalake AI

"We need to see openness and transparency – honesty about what AI is and is not capable of. 100% disclosure to consumers about what their data will be used for, in concrete, simple and curt terms."

Tony O'Neill, Customer Success Manager & Automation Consultant, Alphalake AI



4. Government support

There are calls for improved support of small businesses through government schemes and help with updating legacy systems. One respondent suggested that the government should host AI hackathons and help winners with data collection, funding and investment. Government support and funding should be focused on digitally transforming vast areas of the economy and businesses.



5. Legacy systems

There are calls for modernisation of the “brownfield IT landscape”, and for help to get organisations data friendly and analytics ready. We need technology which can integrate more easily with legacy systems, and there is also a need for simpler integrations and upkeep, such as no- and low-code solutions, and improved compatibility with other systems.



6. Support communities

There is a need for more ways in which AI practitioners can collaborate and share infrastructures and resources, by joining communities of practice that provide a platform for such opportunities. Such communities may have ethical agendas and they may provide open source datasets with which its members can build algorithms.

“Every organisation that dabbles in AI technology should have an AI ethics board that can formulate basic ethical guidelines that would bring in a certain amount of fairness and transparency to AI.”

Minu Mathew, Independent Consultant

“We need to see real world stories where AI has played a positive role in helping organisations thrive – either financially or productively – through improved delivery of services to the community at large.”

Andrzej Baldin, Vice President EMEA, Ivanti

“The education system needs to start acknowledging the importance of coding and theoretical knowledge. The universities should look into increasing the range of AI-focused courses. Organisations will sooner or later have to consider (re)training the current workforce to stay competitive.”

**James Hodgson, Senior Director,
FINTECH Circle**

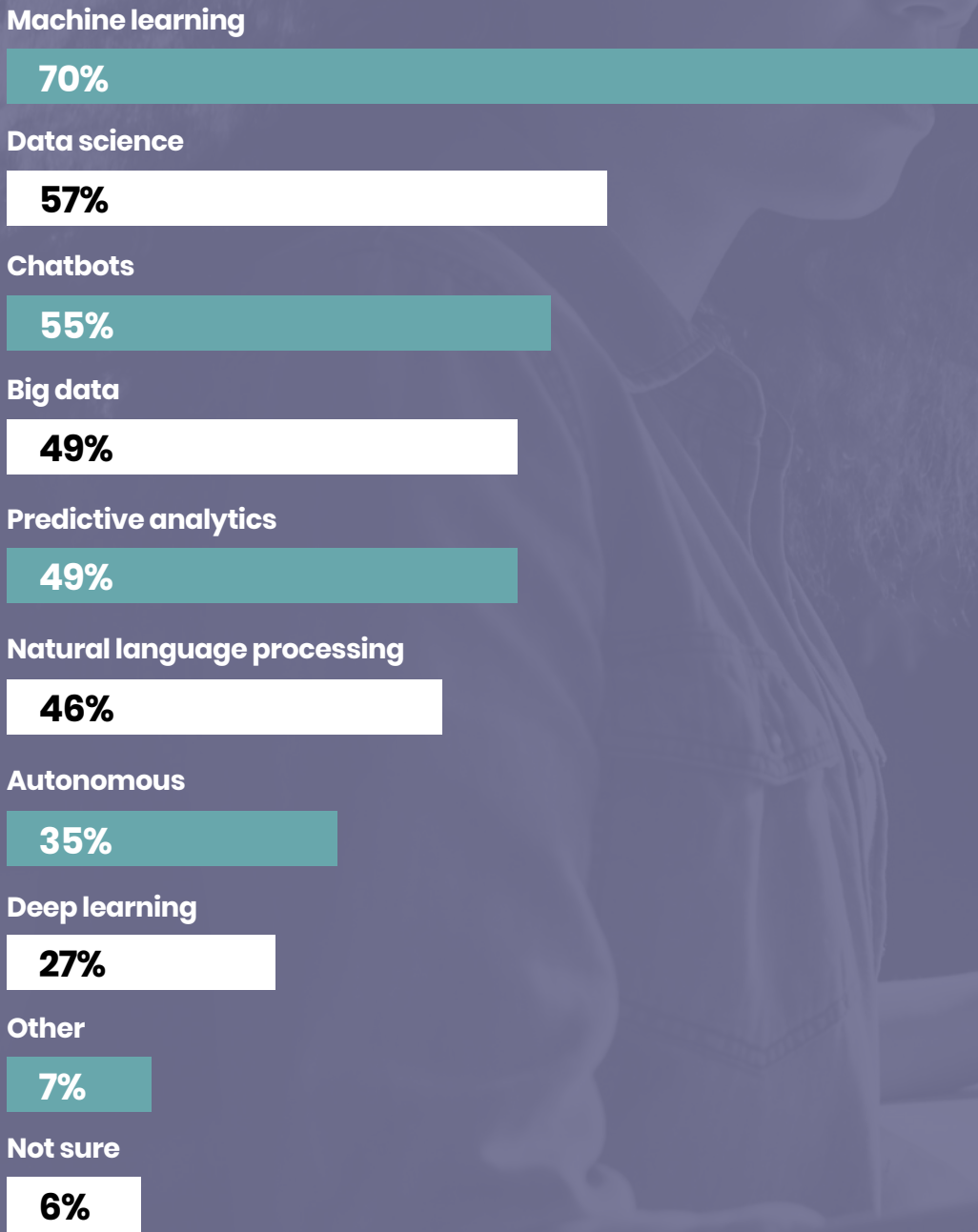
“There’s a lack of education in the younger generation with a huge gap in digital skills, AI and computer science. It is important that we educate them so that we ultimately achieve our potential with AI.”

Nyomi Rose, AI Tech North



SECTION 4: CURRENT AND PLANNED IMPLEMENTATIONS

AI tools currently used within respondents' organisations:



60% of respondents reported that their organisation currently uses AI; a further 52% are currently planning an implementation.

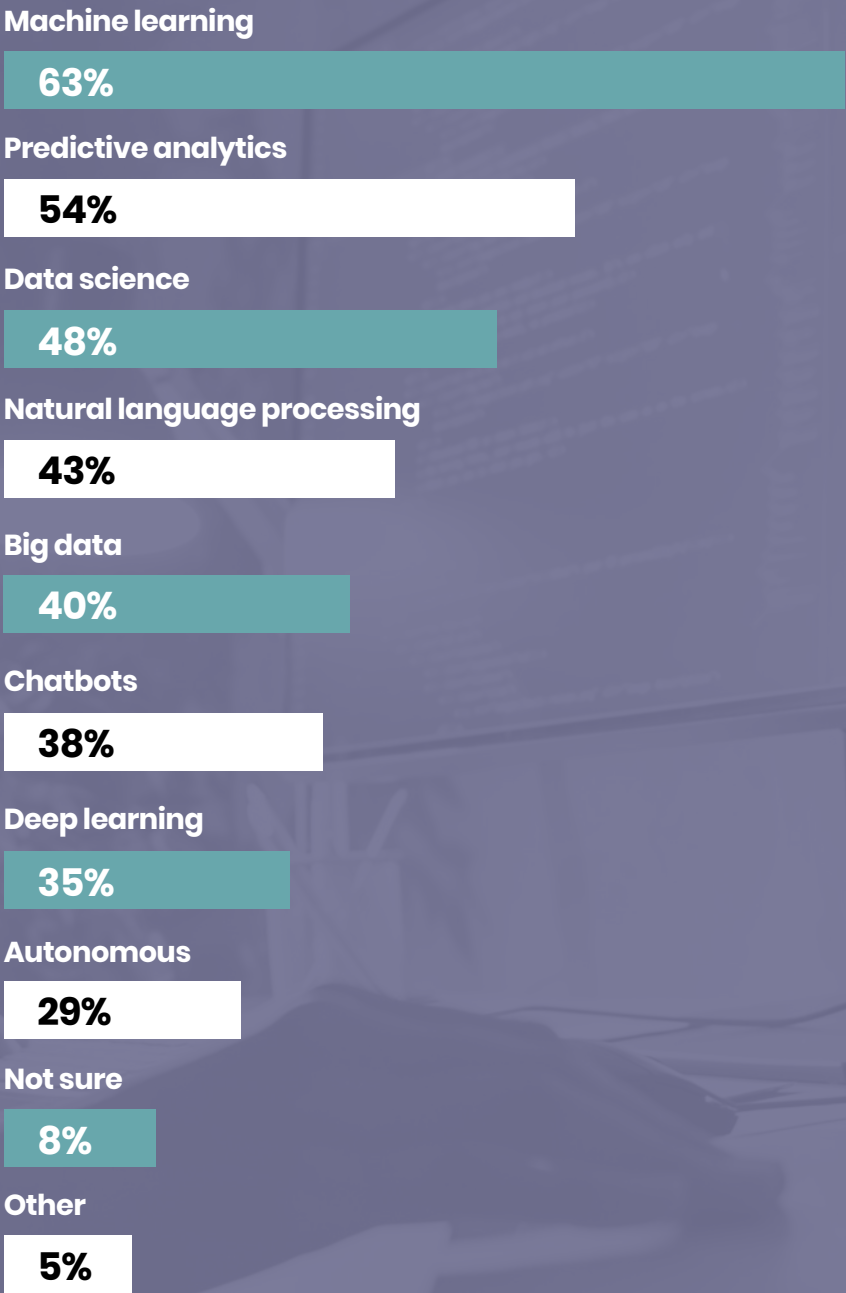
We can see that machine learning is the key technology of the moment – it is already being used

in many companies (70%), and there are many more to come (63%).

The other key technologies pointed to by our respondents were data science, predictive analytics and chatbots.

But the AI community is future-facing – whatever technologies are currently being developed will presumably feature on lists of implementations in the years to come.

Planned implementations of AI:



WHAT'S NEXT FOR AI?

This report has shown that there are numerous opportunities to consider. We hope that the report has provided some useful talking points about the future of AI and how helpful it will be as the world moves forward.

Here are some final questions for you to consider, that we expect will form part of this debate:

How will the benefits to business from AI balance out the effects on unemployment?

What form of regulation does the industry need – hard or soft; self-regulated or Government controlled?

Would an industry association form an important part of that role; and also as a hub for a community of AI practitioners

to develop expertise?

What provision does there need to be for training and education, and does that need to be industry-led?

What form of communications activities should be launched to promote the positive aspects of AI to the general public and to business, and who should launch such a campaign?

What role do industry awards have in improving AI's reputation, by celebrating examples of ethical achievement in AI?

What more can schools do to educate children about the opportunities brought by AI in a meaningful way?

What efforts need to be made to convert legacy systems to make them AI-ready?

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