



The Artificial Intelligence Newsletter

May 2023



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Introduction

Staying ahead of the curve

At PwC Albania and Kosovo, we are always on the lookout for new technologies, trending topics, inside stories on the future of technology and innovations globally, etc., aiming to share them with all tech enthusiasts.

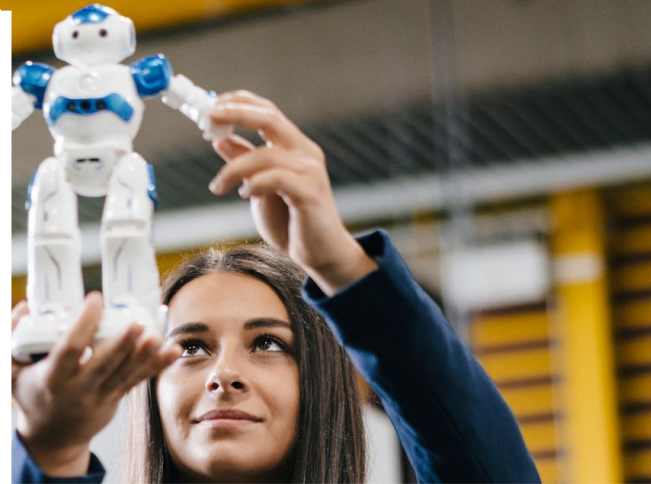
The first part of the AI Newsletter consisted of the latest trends in the field of artificial intelligence, including transformers, generative models, large language models (LLMs), natural language processing (NLP), and diffusion models. We also discussed the growing ethical concerns surrounding the advancements in AI technology.

In our second edition, we will focus on the topics of predictive analytics, automated decision making, big data, and related AI ethics concerns. Our aim is to provide our readers with insights and updates on the latest developments in the field of AI and to continue to share our passion for technology with all tech enthusiasts.

*Through these newsletters PwC Albania and Kosovo is not endorsing any of the technologies or solutions mentioned, but rather summarizing and bringing to you trending technologies which are defined by external experts as game-changing technologies.

The technology

Predictive Analytics, Automated Decision Making, Big Data and Modern Age Ethics



Predictive Analytics and Automated Decision Making

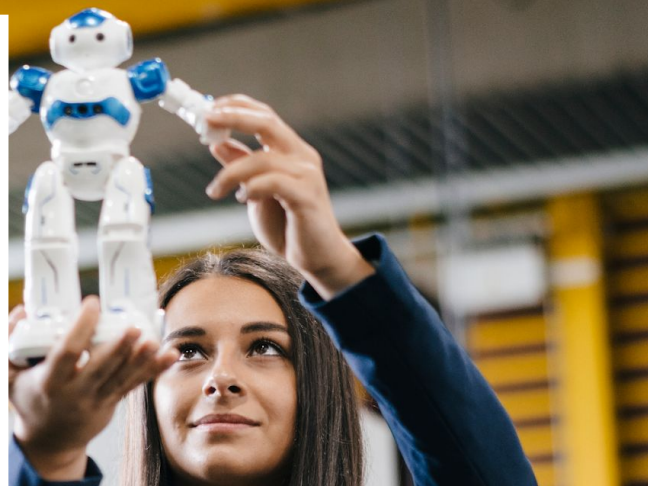
Predictive analytics and automated decision-making can be greatly aided by large language models. These models can process large amounts of data quickly, and can generate accurate and human-like responses. This can help to reduce the time and energy spent on manual decision-making and can help to ensure that decisions are made with the highest degree of accuracy.

- **Predictive analytics** is the use of data, statistical algorithms, and machine learning techniques to identify the likelihood of future outcomes based on historical data. These techniques can be used to make predictions about a wide range of events, such as customer behavior, equipment failures, and fraud detection.
- **Automated decision making** refers to the use of AI systems to make decisions without human intervention. This can include decision making in areas such as finance, healthcare, and transportation. Automated decision making can provide many benefits, such as improved efficiency, accuracy, and speed of decision making.

However, there are also ethical concerns around the use of predictive analytics and automated decision making, such as bias and discrimination, privacy and security, and accountability and transparency.

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Big Data, constructing the world of AI models using descriptive data

Big data refers to the **large and complex data sets** that are generated by various sources such as social media, internet of things devices, and sensor networks. These data sets have the potential to provide valuable insights into a wide range of areas such as customer behavior, market trends, and disease outbreaks.

Big data is **essential for training large transformer models**, and there is a finite amount of data available. Right now it seems that a lot of companies are in need of new data that is descriptive of more aspects of human work, life and interactions.

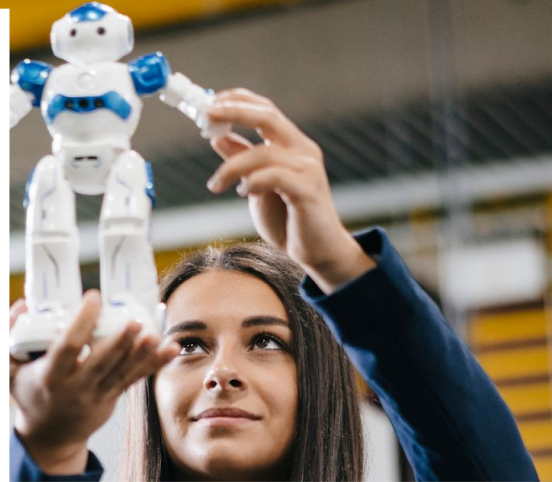
This is one of the largest problems that will be faced by AI companies and professionals, to build new reliable systems that can work across many professions.

However, a potential approach to mediate in the short term the effects of this issue, may be the **construction of new datasets from existing data sources** and the generation of synthetic datasets in order to create datasets that are large enough to train these models.

Additionally, techniques such as transfer learning can be used to improve the accuracy of these models without the need for large datasets.

The technology

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Modern Age Ethical Concerns: Artificial Intelligence

Ethical concerns of AI generative models are becoming increasingly important, as these models are being used to create automated decision-making systems and predictive analytics. Issues such as privacy, data bias, and algorithmic transparency are especially pertinent to consider when dealing with large language models such as ChatGPT and Stable Diffusion.

As AI technology advances and becomes more prevalent in society, there are a number of ethical concerns that must be taken into account. Some of these concerns include:

- **Bias and discrimination:** AI models can perpetuate and amplify existing biases in the data they are trained on, leading to unfair and discriminatory outcomes.
- **Privacy and security:** AI systems can collect and process large amounts of personal data, raising concerns about how this data is used and protected.
- **Job displacement:** AI systems can automate tasks that were previously done by humans, leading to job losses and economic disruption.
- **Autonomy and accountability:** As AI systems become more autonomous, it can be difficult to determine who is responsible for their actions and decisions.

To address these ethical concerns, it is important for companies and researchers to take a proactive approach to understanding and mitigating the potential negative impacts of AI. This can include implementing fair and transparent AI practices, such as regularly monitoring and testing for bias in AI models, and developing clear and transparent processes for decision making by AI systems.

Additionally, there is a need to establish laws and regulations to govern the use and development of AI.

Stay tuned for our upcoming newsletter covering potential positive and negative impacts of AI, potential political and regulatory solutions as well as its impact on the future of work and wealth.

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