

# Rečnícky prejav

- Vážení prítomní, dnes pred vami stojím, aby som Vám predstavil tému, ktorý nie je obmedzený len na oblasť vedeckej fantastiky, ale rýchlo sa stáva neoddeliteľnou súčasťou nášho každodenného života. Témou je využitie neurónových sietí a ja som tu, aby som vás vzal na cestu prostredím umelej inteligencie a jej reálnych dôsledkov.
- V druhom odseku sa zdôrazňuje široké využívanie umelej inteligencie v našom každodennom živote, od predpovedania textov v smartfónoch až po hlasových asistentov, ako sú Siri a Alexa.
- V treťom odseku sa rozoberá rýchly pokrok technológie AI, pričom sa zdôrazňujú príklady ako samojazdiace autá, virtuálni asistenti a odporúčacie algoritmy.
- Štvrtý odsek poskytuje základné vysvetlenie umelej inteligencie a opisuje ju ako technológiu, ktorá sa učí z údajov a prijíma rozhodnutia na základe tohto učenia. Spomínajú sa v ňom schopnosti umelej inteligencie, ako je rozpoznávanie obrazu a porozumenie prirodzenému jazyku.
- V piatom odseku sa uvádzajú etické obavy súvisiace s AI vrátane presunu pracovných miest a zaujatosti v systémoch AI.
- Šiesty odsek sa zameriava na praktické aspekty vzdelávania v oblasti UI, ako je výučba programovacích jazykov, napríklad jazyka Python, a poskytovanie školení o nástrojoch a platformách UI.
- Siedmy odsek skúma potenciálne reálne aplikácie AI vrátane zdravotnej starostlivosti, predpovedania počasia a prevencie podvodov.
- V ôsmom odseku sa opakuje význam vzdelávania v oblasti UI a jej zodpovedného používania, pričom sa zdôrazňuje potreba technickej odbornej prípravy, etických diskusií a skúmania možností UI.
- Deviaty odsek prechádza na základy strojového učenia, najmä neurónových sietí, a spomína učenie pod dohľadom ako koncept.
- Desiaty odsek predstavuje rôzne typy neurónových sietí vrátane perceptrónov, viacvrstvových perceptrónov (MLP), konvolučných neurónových sietí (CNN) a rekurentných neurónových sietí (RNN) a vysvetľuje ich úlohy a aplikácie.
- V jedenástom odseku sa venuje reálnym aplikáciám neurónových sietí, pričom spomína DALL-E 2 od OpenAI, ChatGPT 3.0 a algoritmus YouTube na udržanie divákov.
- Dvanásty odsek uzatvára zdôraznením transformačného potenciálu umelej inteligencie, významu vzdelávania a zodpovednosti za etické používanie. Nabáda na ďalšie skúmanie umelej inteligencie.

Ladies and gentlemen, distinguished guests, I stand before you today to delve into a fascinating world that's not just confined to the realms of science fiction but is rapidly becoming an integral part of our everyday lives. The topic at hand is the usage of neural networks in modern applications, and I'm here to take you on a journey through the exciting landscape of artificial intelligence and its real-world implications.

Why did I choose this topic, you might wonder? It's because I believe it's crucial for all of us to understand that AI is not limited to the silver screen or video games. It's a technology that permeates our daily lives, from the text predictions on our smartphones to the voice assistants like Siri and Alexa that we interact with regularly.

Artificial intelligence, or AI, is undeniably one of the most rapidly advancing fields of technology today. Think about self-driving cars, virtual assistants, and even the powerful algorithms that suggest movies on streaming platforms; all these innovations are fueled by AI. As AI continues to evolve and integrate into our lives, it's essential that we grasp the fundamentals, comprehend its workings, and appreciate its implications.

At its core, AI is about building machines that learn from data and make decisions based on that learning. It's a stark departure from the traditional approach to programming, where explicit instructions are provided to machines. AI, on the other hand, learns patterns and makes predictions. This capability enables AI to do remarkable things such as recognizing images, understanding natural language, and even competing in complex games like chess.

However, the rise of AI also brings about ethical challenges and concerns. There's the risk of job displacement as AI systems become more capable of performing tasks traditionally done by humans. Bias in AI systems is another critical issue that can perpetuate discrimination and social inequalities. Hence, it's imperative that we educate ourselves and others about the ethical considerations surrounding AI, allowing us to make informed decisions about its development and usage.

But it's not just about ethics; there are practical aspects too. We need to equip people with the necessary technical skills to work with AI systems, whether in developing them or utilizing them in various domains. This might involve teaching programming languages like Python or providing training on specific AI tools and platforms.

Moreover, we must explore the vast potential applications of AI in solving real-world problems. Imagine how AI could enhance healthcare outcomes by analyzing patient data or revolutionize weather forecasting accuracy. It can even play a pivotal role in identifying and preventing financial fraud.

In conclusion, educating ourselves about AI is not just an academic pursuit; it's a necessity in today's world. We must be prepared for the opportunities and challenges that this technology brings. This means offering technical training, discussing ethical considerations, and exploring the endless possibilities that AI offers. By doing so, we can harness the power of AI for the benefit of all while minimizing the associated risks.

Now, let's dive deeper into the basics of machine learning, the very foundation of AI. Machine learning isn't a new concept; scientists have been exploring it since the 1950s. It's a subset of AI where computers learn on their own, adapting and improving their performance over time.

One of the fundamental building blocks of machine learning is neural networks. These are multi-layered structures composed of interconnected neurons, mimicking the human brain's structure. Each neuron receives inputs from others in its layer and passes outputs to the next layer. This interconnected web of neurons enables the network to process information and make predictions.

In the realm of neural networks, there's a concept called "Supervised Learning." This involves training the neural network with labeled data, where it learns to associate inputs with specific outputs. For instance, think of training a network to predict a person's gender based on their description.

But not all neural networks are created equal. Let's explore different types, starting with the Perceptron. It's the simplest form, acting as a linear classifier, drawing boundaries in a graph to distinguish between categories. It's a foundation for more complex networks like the Multi-layered Perceptron (MLP). The MLP comprises multiple layers, including an input layer, hidden layers, and an output layer, allowing it to handle more complex tasks and learn nonlinear relationships.

Next up, we have Convolutional Neural Networks (CNNs). These are tailored for visual data analysis, making them perfect for image recognition, face recognition, and speech processing. CNNs consist of convolutional layers that act as feature extractors, allowing them to identify patterns and make classifications. They've found applications in various domains, from medical diagnoses to generating deep fake videos.

Recurrent Neural Networks (RNNs) take a different approach, allowing information to flow between steps in the computation process. This is particularly useful in language models, such as the ChatGPT algorithm developed by OpenAI. RNNs can understand context and generate conversational responses similar to humans, making them invaluable in various applications, including personalized medical treatments.

Now, let's dive into some real-world applications of neural networks. OpenAI's DALL-E 2 is a remarkable algorithm that generates images based on text prompts. Whether it's turning "a rainy day" into a picturesque image or expanding existing artworks, DALL-E 2 showcases the power of AI in creative expression. You can even try it for yourself on OpenAI's website.

Moving on to ChatGPT 3.0, developed by OpenAI as well. This natural language model is the most advanced of its kind, capable of creating human-like conversations in multiple languages. It's already being explored as a replacement for

human customer service representatives and even used to generate entire games from scratch. However, its immense potential also raises concerns about misuse, from impersonation to fake news generation.

One more intriguing example is YouTube's viewer retention algorithm. With over a billion users every month, YouTube uses AI to recommend videos and keep users engaged. It's a complex system that takes into account a user's watch history and preferences to generate personalized recommendations, using TensorFlow-based neural networks.

In conclusion, we are on the cusp of an AI-driven revolution that will reshape our world in ways we can't fully grasp yet. AI is not just for computer scientists; it's for all of us. It holds the power to solve today's problems and create a brighter future. However, it also demands responsible use and ethical considerations.

As we navigate this AI-powered future, let's remember that education is our ally. By understanding the foundations of AI, its ethical implications, and its practical applications, we can ensure that AI benefits all of humanity, rather than being monopolized by a few. Thank you for your attention, and I encourage you to explore the exciting world of AI further. If you have any questions, feel free to reach out.