The World of Artificial Intelligence

Ai

Understanding and Calculating the Risks

Neural Networks

Neural networks are a fundamental component of artificial intelligence (AI), and they play a crucial role in various machine learning tasks. A neural network is a computational model inspired by the way biological neural networks in the human brain work. It consists of interconnected nodes, or artificial neurons, organized into layers. These layers include an input layer, one or more hidden layers, and an output layer.

• Neural networks are used in a wide range of AI applications, including image and speech recognition, natural language processing, autonomous vehicles, gaming, healthcare, and more. Their ability to learn from data and generalize to new, unseen examples makes them powerful tools for various tasks.

• Neural networks are a foundational technology within the broader field of AI, and their versatility makes them well-suited for solving a wide range of complex problems. Ongoing research continues to refine and extend the capabilities of neural network architectures for various applications in artificial intelligence.

• Neural networks are "trained" using a process called backpropagation (an algorithm used to test for errors with input and output). During "training", the network learns to adjust its weights and biases based on the error between its predictions and the actual outcomes.

Neural networks, also come with certain risks and challenges. It's important to be aware of these potential issues. Some common risks associated with neural networks include; data bias, ethical concerns, and dependence on data sets. To address these risks, researchers and practitioners in the field of artificial intelligence actively work on developing techniques for improving the robustness, fairness, and interpretability of neural networks. RLR is working collaboratively with such practitioners to develop a workprogram to support the organization's decisions to deploy new technologies related to AI and intelligence automation. Regulatory frameworks are evolving to guide the responsible development and deployment of neural network-based AI systems.

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