Artificial Intelligence and EPOS AI™

EPOS

What Is Artificial Intelligence?

Artificial intelligence, or AI, is undoubtedly the hottest topic in technology right now. AI refers to the ability for a computer program or application to essentially learn by itself, much as humans do. It is so named because it seeks to mimic human intelligence in an artificial, or nonhuman, way. Rather than a human merely telling a machine how to carry out a task, the machine is taught, over time, how to "think" and perform the task on its own.

While the general principles behind AI have been understood for decades, technological limitations have prevented widespread use or adoption of AI-designed or AI-enabled products. All that has changed in recent years with massive increases to both computing power and digital storage, resulting in an explosion of AI.

Some of the biggest technology companies are employing the power of AI to transform our lives. By collecting massive amounts of data, sifting through it and using AI to identify patterns unseen to humans, they are working to improve our understanding of the universe, create cutting-edge medical breakthroughs, protect the environment and much more.
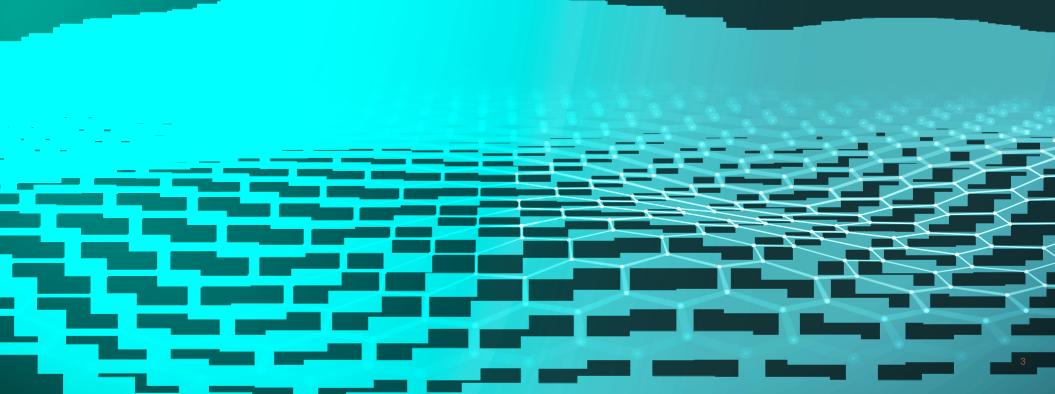
Closer to home, AI is quickly changing the way we live. Elements of AI make it possible for us to do everything from turning on the lights or turning up the heat using a personal assistant, to getting personalized suggestions for products to buy or TV shows to watch, to taking a ride in a self-driving automobile.

AI and Machines that Learn

Since the dawn of time, it was assumed that only living creatures had the capacity to learn. By about the middle of the 20th century scientists began defining intelligent machines. Within a few decades, machine learning became a commonly used tool in research and highly advanced industry. More recently, and in conjunction with massive increases to computing power, AI has moved into our daily lives, through personal assistants such as Alexa, Siri and others that can predict our actions.

Among the most common forms of machine learning is what's known as a neural network, which is a series of interconnected layers of neurons, which are similar to the billions of neurons found in the human brain. Because a neural network mimics the human brain, it can be trained in largely the same way. To do this, the neural network is fed a series of data inputs and the correct desired outcome. Over time and through a process of trial and error, it continually adjusts the neurons until it learns the essentials of the training data.

Just because it has learned doesn't mean that the neural network is perfect, though. Because of its similarity to the human brain, it occasionally makes errors. In this case, "learning" merely means that the neural network has been trained until its mistakes are kept to a level that is deemed acceptable.

Introducing EPOS AI™

EPOS AI™ represents a true technological breakthrough and an industry first. Developed by a team of EPOS engineers, EPOS AI™ is a tiny but powerful network that can separate human voices from other extraneous sounds.

At the heart of EPOS AI™ lies an industry leading deep neural network. Using deep learning in a sophisticated sound laboratory, EPOS engineers have repeatedly exposed the neural network to real-life audio inputs over a prolonged period of time. This has enabled EPOS AI™ to "learn" and understand the difference between the user's speech and extraneous noises, including background speech.

The deep-learning process goes on continuously in EPOS' sound laboratory, with the network constantly being exposed to new inputs, enabling it to identify an ever-expanding range of sounds. This allows product updates to be made available once the network has acquired enough new knowledge to make a difference.

ADAPT 600, Powered by EPOS AI™

Modern workplaces are constantly evolving – becoming more mobile, versatile and flexible. Whether in the office, open workspaces, at home or on the go, the ADAPT Line of premium audio tools enables seamless transition between locations and offers best-in-class audio quality, enabling outstanding concentration and collaboration, anytime and anywhere.

Intelligent Adaptive Audio

Our newest flagship headset, the groundbreaking ADAPT 660, is the world's first UC-certified headset that incorporates a machine learning-enhanced voice pick-up. This, along with adaptive active noise cancellation, offers superb clarity on both sides of the call. Combined with rich stereo sound, ADAPT 660 helps today's mobile workers maximize focus, boost efficiency and increase productivity anywhere.

ADAPT 660 is powered by EPOS AI™, which is fully contained within the headset and runs without the need for a companion mobile phone app. A deep neural network combined with a series of finely tuned microphones offers pristine voice pick-up, ensuring a superb audio experience for your listener.

In a sense, EPOS AI™ acts as a tiny audio engineer within your ADAPT 660 headset. EPOS AI™ continually monitors your audio surroundings and instantly adjusts your microphone settings to your environment based on a virtually infinite number of parameters.

Whether you're holding a conversation inside in an open office or outdoors on a busy street, the EPOS AI™ embedded inside ADAPT 660 immediately senses your evolving audio environment, identifies your speech and separates it from other noises surrounding you – such as ringing phones and noisy coworkers in the office and traffic, wind and even background voices on the street. It then suppresses those extraneous sounds, ensuring that your listener hears only what's important – your voice.

Compact Size, and AI at the Cutting Edge

What's perhaps most impressive about EPOS AI™ is its size – or lack of it. For perspective, the AI that is incorporated into smartphones is often referred to as Tiny AI, because of its relatively small size. EPOS AI™ is far smaller than Tiny AI; so compact in fact, that more than 50 of its neural networks would fit within the memory used by a single JPG photo.

This compact size, which allows EPOS AI™ to run locally within the headset and without the need for a connection such as a mobile phone, makes ADAPT 660 an Edge AI device. This type of AI is incorporated "at the edge" – or as close to the user as possible.

The Future of AI

Once thought to be the stuff of science fiction, artificial intelligence has rapidly become very real thanks to massive increases in computing power and storage capacities. AI-designed and enabled personal assistants have, for example, gone from novelty to commonplace in short order, and AI is rapidly making its way into audio and video devices and beyond.

AI offers a world of exciting possibilities virtually everywhere – from improving the world we live in to transforming the way we interact with each other. It won't be long before every business or consumer audio device – whether mobile phone, headset or earbuds – will incorporate some form of artificial intelligence, enabling us to experience clearer, more efficient and more personalized interactions with others.

At EPOS, we realize that we have barely scratched the surface of the vast potential AI offers, especially since AI adoption is expected to increase dramatically in the years ahead. We are thrilled to be on the forefront of this technology and proud of what we have accomplished so far. We look forward to creating technologies that help make lives richer, more productive and more enjoyable for years to come.