# What is Artificial Intelligence?

Artificial Intelligence (AI) refers to computational models that imitate human behavior and thought processes. These computational models can therefore behave rationally and intelligently.

# AI Basics

[AI](http://www.computerworld.com/article/2906336/emerging-technology/what-is-artificial-intelligence.html) is defined as the science and engineering of creating intelligent machines and computer programs. Intelligence is defined as the computational ability to process and understand information in order to achieve goals. AI often focuses on simulating human intelligence by studying problem solving instead of biologically studying people or animals. AI researchers typically feed computer programs massive amounts of information, such as through pictures, in conjunction with software programming that defines parameters and stimulates experiential learning. IQ rates in children are defined at the ratio a child normally reaches a certain development score, but AI levels are still difficult to define at the moment. AI has many modern applications, many of which are still being developed by researchers.

# AI Branches

There are many branches of AI, some of which are actually topics or concepts instead of full branches. First, logical AI is the field that focuses on explaining how computational programs should act, what their goals are and when these goals are reached. These goals are represented by sentences of mathematical logical languages. AI research examines the infinite numbers of possibilities that an AI program can achieve, such as possible moves in a chess game. AI pattern recognition focuses on how programs make accurate observations through comparative analysis. AI representation is the field of representing facts of the world through the languages of mathematical logic. AI inference is a major field that uses logical deductions to create simulated reasoning.

# AI Applications

One of the most popular applications of AI is game playing. Anyone who has ever played a video game against the computer is technically playing against an AI program. A chess AI program can only beat a world grand master player through the brute force computation of heuristics that consider up to 200 million positions per second. Speech recognition is another popular application that began in the 1990s and today has been integrated into mobile phone programs, such as Apple’s personal assistant Siri. AI has limited computer vision of 3D objects, which is sometimes used in security systems. AI expert systems use vast databases of technical information, such as medical or engineering knowledge, to answer complex problems. Heuristic classifications are logical programs that make decisions, such as credit card companies that quickly run online checks on applications.

# Advanced AI

AI research is performed by theoretical and experimental researchers. The experimental side has basic and applied aspects. All researchers generally focus on two concepts: biology and phenomenon. The biological side believes that AI should study humans and imitate their psychology or behavior. The phenomenal side studies and formalizes common sense facts about the world that are fed to AI programs. For example, these researchers may program an AI machine to study hundreds of thousands of pictures related to sports and physical activities. Once the program is able to define and identify common characteristics, such as equipment, players and motion, they are able to differentiate sports from other activities. Those who want to work in the field of AI must study math and mathematical logic. They must also learn about science, such as physics and biology, and learn programming languages, such as C++ and Java.

Artificial Intelligence involves programs and machines that imitate human cognitive processing and decision making.