"Machine perception" is a term that is used to identify the capability of a computer system to interpret data in a manner that is similar to the way humans use their senses to relate to the world around them. Considered a form of artificial intelligence, the goal of machine perception is to equip the computer system with the necessary hardware and software to recognize images, sounds, and even touch in a manner that enhances the interactivity between human operators and the machines. Advances in machine perception include both online and offline applications, aiding the machines in being of greater support to operators.

The concept of machine perceptions calls for the inclusion of software that makes it possible for the computer systems to not only process direct commands but to also utilize audio and visual input to anticipate additional information that may be of use. This would involve the ability of the system to not only make use of resources that are directly accessible but to also tap into other sources of data using authorization and encryptioncodes at the disposal of the machine, and communicate that data to humans operating the system. With this approach, machine perception could conceivably reduce the amount of time it takes to identify useful information, especially if the human subject is not quite sure how or where to search for the data required.

Machine perception has been one of the goals of computer technology since the creation of the first electronic brains in the first half of the 20th century. Science fiction writers and later movies devoted to futuristic societies often portrayed this type of interaction between humans and machines as becoming almost like two individuals carrying on a conversation. With continued efforts to enhance computer operations so this type of communication is possible, at least part of these older visions for the future are already in place.

There are a number of situations in which enhanced machine perception can be extremely helpful. For example, a query by an authorized physician regarding the health history of a given patient may go beyond the records associated directly with that physician and move on to include any health-related data involving that person that is found in the public domain or any other health information databases that the computer can access legally. This means that if there are newspaper accounts of the patient being involved in a traffic accident several years ago, or that the patient was treated for a particular illness or injury while traveling, the information is included in the returned results, allowing the physician to evaluate the patient's current position with greater competence.

While still a work in progress, machine perception is a reality today. There are systems that are capable of voice and limited visual communications with humans. Experimentation with touch access to systems is also found in systems that are high-security in nature, making it possible to decrease the potential for illegal access to proprietary data.