Abstract

In computer science today, machine learning presents itself as a rather broad and far-reaching field of study. Many previously unsolvable problems have found solutions through various machine learning techniques. The Internet provides large amounts of data that need efficient processing algorithms for use in practice. Machine learning techniques cut down on processing time for problems such as image classification, fraud detection, natural language processing, speech recognition, and so on. A convolutional neural network, one such machine learning solution, is one of the most accurate new methods for image recognition. This research experiment determines whether or not a convolutional neural network known as AlexNet can be used effectively in the context of assisting those with visual impairments. Small margins of error result in disaster if a person depends upon correct image recognition to navigate his or her environment. As such, the experiment tests ten types of images, and relevant statistics reveal whether or not the convolutional neural network is reliable enough for practical use.

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