

Convolution neural network used to identify dog breeds from photographs

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Researchers in India have demonstrated how a convolution neural network can be used to identify dog breeds from photographs. Writing in the *International Journal of Swarm Intelligence*, the team explains how

they have trained their algorithm with more than 15 million images of dogs and used a model that could carry out 22,000 different object classifications on those good resolution images. The system can then correctly identify which of 133 breeds is represented by a new photograph of a dog presented to it with 98 percent accuracy.

The critical difference between the approach taken by Amit Kumar Jakhar and Mrityunjay Singh Jaypee of the University of Information Technology in Solan, and Anjani Kumar Shukla of the Bundelkhand Institute of Engineering and Technology, in Jhansi, is that rather than building a recognition system from scratch, the team has pre-trained their model using a vast database.

There is a growing need for the classification and annotation of digital images with a view to improving their curation for a wide range of purposes. A quick way to identify and classify an object in a given image could be used in industry, education, [law enforcement](#), medicine, science, and many other areas. As such, many research teams the world over are investigating different approaches that involve [machine learning](#) and what is perhaps whimsically known as artificial intelligence to identify and categorize visual content in an image.

As a demonstration of the power of such systems being able to pick out a specific dog breed with high accuracy from a photograph given the diversity of dogs bodes well for the evolution of this area of research where even more subtle distinctions between similar objects might need to be made.

"In the future, [deep learning](#) will create other [deep learning models](#) on its own and deep learning models will write codes and surpass human coding capabilities as well and its scope can be extended in medical sciences by analyzing the images by deep convolution neural network," the team concludes.

More information: Amit Kumar Jakhar et al, Dog breed classification using convolution neural network, *International Journal of Swarm Intelligence* (2021). [DOI: 10.1504/IJSI.2021.118622](https://doi.org/10.1504/IJSI.2021.118622), www.inderscience.com/info/inar...cle.php?artid=118622

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