

# Epoch – Decoding meaning

A project by Arthur Boer and Boris Smeenk that explores the field of computer vision in relation to the current visual culture. The duo built a machine, that by using **deep learning** technology generates images and captions in real time. The system uses 'Instagram' to serve as the database on which it learns and thus becomes a machine interpretation of the current culture, which encompasses the relevant content within the online domain – image, language, emojis and hashtags”.

[arthurboer.net](http://arthurboer.net)

[borissmeenk.nl](http://borissmeenk.nl)

[epochai.github.io](http://epochai.github.io)

Over the past few years there has been a huge growth in the implementation of **deep learning** applications. At its heart, *deep learning* is the process of training computers to perform complex tasks that previously were carried out by humans, more specifically by the human brain. This includes 'reading' images and contextualising their content. Machine labor is valuable for big corporations like Google and Facebook, which keep boosting this industry. They aspire towards a machine which can decode data – pushing human complexity into simplified and labeled boxes, valuable for mass surveillance and targeted advertising.

Teaching computers to **see** as humans proves to be extremely challenging. However, the developed technology **Convolutional Neural Networks (ConvNets)** has proven to be a breakthrough within this domain. **ConvNets** is a computational algorithm that is embedded with millions of human like neurons and is able to process information at a high speed. Similar to a child that learns by interacting with the world, the program is able to learn by analysing large amounts of data by trying to find patterns and regularities. For example by feeding the program a database of human faces, it is able to recognise a face

within images as well as to generate a face based on the millions of images it has analysed.

*An epoch is a long period of time, an era of new development and great change.*

*When training artificial neural networks, 'one epoch' means one full training cycle on the training data set.*