International Journal of Swarm Intelligence and Evolutionary Computation

OPEN ACCESS Freely available online

Editorial

Deep Learning with Python in Data Science and Artificial Neural Networks

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EDITORIAL NOTE

It is a branch in computing that studies the planning of algorithms which will learn. Deep learning architectures are susceptible to adversarial perturbations. They added to the input and alter drastically the output of deep networks. These instances are called adversarial examples. They're observed in various learning tasks from supervised learning to unsupervised and reinforcement learning. These algorithms are usually called Artificial Neural Networks (ANN). Deep learning is one among the most well liked fields in data science with many case studies that have astonishing leads to robotics, image recognition and Artificial Intelligence (AI).

Python may be a general-purpose high level programing language that's widely utilized in data science and for producing deep learning algorithms.

APPLICATION

- Restoring color B&W Photos and Videos – The Deep Learning network learns patterns that naturally occur within photos. This includes blue skies, white and grey clouds, and therefore the greens of grasses. It uses past experience to find out this.
- Pixel Restoration – With deep learning, we will even zoom into a video beyond its resolution.
- Describing Pictures – A deep learning network can identify many areas in a picture and may describe each area in words.
- Changing Gaze in Photos – A Deep Learning network can alter the direction during which an individual looks during a picture.
- Real-Time Analysis of Behavior – they will get real-time insights about behaviors of individuals, cars, and other objects.
- Translation – it's now possible to translate text on images in real-time.
- Generating Pictures of Galaxies and Volcanoes – Using Deep Learning with Python, astronomers can create pictures of volcanoes and galaxies.
- Creating New Images – Pix2Pix taught a deep learning network to perform activities like creating real street scenes from colored blobs, creating a map from a true aerial picture, fill colors between edges of objects, and even turn day scenes into night scenes.
- Checking out Text in Images and Videos – The Oxford Visual Geometry group can look for text in pictures and videos using deep learning.
- Outperforming Humans in Computer Games – Deep Learning community trains humans to beat humans at games like Space Invaders, Pong, and Doom. The computers learned the principles on their own by playing for a couple of hours.
- Robotics – Robots can rise up once they fall, perform tasks that require them to be gentle, and even react to the people that push them around.
- Self-Driving Cars – One name we've all heard is that the Google Self-Driving Car. Such vehicles can differentiate objects, people, and road signs. These also make use of the LIDAR technology.
- Generating Voice – they will learn to mimic human voices in order that they can improve over time.
- Composing Music – the pc learns the patterns and statistics of artists and creates a singular piece.
- Restoring Sound in Videos – Makes possible to revive sound in muted videos.
- Handwriting – With deep learning, computers can't only produce digital text and art, it can handwrite.
- Deep Dreaming – Deep Dreaming makes the pc hallucinate on the highest of a picture.
- Inventing and Hacking own Crypto – Google Brain has devised two neural networks- one to get a cryptographic algorithm to guard their messages.
- Deep Learning Networks Creating Deep Learning Networks – Deep Learning products like Neural Complete can produce new deep learning networks.
- Writing Wikipedia articles, code, math papers, and Shakespeare – Long Short Term Memory (LSTM) is an architecture which will generate Wikipedia-like articles, fake math papers, and far more. Not all the days does this add up, but there'll be progress.

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Received date: December 01, 2020; **Accepted date: December** 24, 2020; **Published date:** December 31, 2020

Citation: Kireeti S (2020) Deep Learning with Python in Data Science and Artificial Neural Networks. Int J Swarm Evol Comput S2:e003.