



Dr B R Ambedkar National Institute of Technology, Jalandhar

CERTIFICATE

We hereby certify that the work which is being presented in this report entitled, “**SMART PHOTO ALBUM USING FACE RECOGNITION & CLUSTERING**” in partial fulfillment of the requirement for the award of Degree of Bachelor of Technology (Electronics and Communication Engineering) submitted in the Department of Electronics and Communication Engineering of Dr B R Ambedkar National Institute of Technology, Jalandhar is a record of our work carried out during 2014-15 under the supervision of Dr. DEEPTI KAKKAR and Dr. ASHISH RAMAN.

The matter presented in this report has not been submitted in part or full to any other University or Institute for the award of any Degree.

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ABSTRACT

In the accelerating works of machine learning and deep-learning, the world is taking its shape by understanding the potential of virtual techniques that are elucidated by these powerful methods. one of the above mentioned strategies is used in this project which helps us in understanding how image dataset can be made and how the images can be clustered and segregated into required folders. The background technique used is inception CNN and many other building and supporting strategic techniques are attached in order to understand the performing criterion and for achieving expected outcome. Face recognition is a widely applied technique for identification of person/thing, the audacity of this feature helps in criminal detection and serves several other purposes like biometrics and security. Convolutional Neural Networks is robust and ease of understanding promises a valid and most realizable outputs. Training is most important part in the entire program. This concept actually performs like a fast learning bot it captures the intake (training set) and remembers when other input data (test data) is given, a comparison is done and output is given. The concept of training is spectacular for elucidating and how the memory is developed and can be termed as artificial intelligence (AI). The distance matrices are used which vastly create the visualization of similarity in data/images. In this project, we use deep CNN which enables us to utilise its potential to a greater extent by avoiding certain transitional layers.

APPLICATIONS

1-Computer vision &pattern resemblance

Application is automatic voice generation to get statistics and other data info like siri and alexa can talk for example text to voice systems were not completely unknown to create new voices, they were (manually) trained to do that. Nowadays, networks learn to mimic human voices by training and improve with time. It also let an audience differentiate them from a real human speaking, but with very small error or so. While we are not there yet in terms of automatic voice generation, Deep Learning is now giving computers the ability to speak like humans do. Same deep learning is used for voice recognition and for training a Deep network to

give rise to music compositions. Below is one example by Francesco Marchetti who trained the computer to compose music like very famous classical composer Chopin .

2-PC games, robotics & Auto driven cars

Google's Deep Mind used a Deep Reinforcement Learning technique of deep learning to teach a computer to play the specific games . The PC wasn't programmed in any way specifically to play the game. Instead, goal was to maximize the score by controlling the keyboard features of game playing. Initially, it is difficult as the movements were mostly of random nature . After continuous playing the computer becomes expert. After long hours of playing the computer realized that dig a tunnel across the wall is the best technique to beat the game The web designing takes into use this technique of learning with new creative ways of applying this technique in various applications. For instance decided to copy and imply the designs putted on system and transfer to modify the Mona Lisa framework according to patterns.

3-Computer hallucinations, estimations

Google's Deep Mind used a Deep Reinforcement Learning technique of deep learning to teach a computer to play the Atari game . The PC wasn't programmed in any way specifically to play the game. Instead, goal was to maximize the score by controlling the keyboard features of game playing. Initially, it is difficult as the movements were mostly of random nature . After continuous playing the computer becomes expert. After long hours of playing the computer realized that dig a tunnel across the wall is the best technique to beat the game.

Robotics also takes service of deep learning example Boston and Dynamics , SpotMini and Atlas. The network react to people pushing and forcing, they also get up when falling learn again and again, and can even take care of pretty difficult tasks that require complex robotics and heavy designing. Google Brain a research field has created two neural networks for security purposes, one that creates its own cryptographic algorithm to protect their big messages and the other network is trying to crack . The network performed very well at devising new crypto mechanisms but it is not as good at hacking with them. Harvard and Stanford scientists used Deep and machine Learning to train a computer to perform/visualize visco -elastic computations, computations used in predictions and estimation of earthquakes which improved Deep machine analysis time calculation improved in time by 60000%.

YouTube is generally busy with videos of the computer Deep Dreaming and Fear , Loathing in Las Vegas, Alice trapped in Wonderland and imaginary & cities, Vincent andianan & Gogh and even Donald and Trump.

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