CSE-3013 Artificial Intelligence

Slot : E2+TE2

Automatic Colorization using Auto-encoders

Team Members

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Project Report
Under the Guidance of
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Objective :

Conversion of black and white images to coloured images without human intervention has been the subject of various researches going on within communities of machine learning and computer vision. Beyond simply being fascinating from an aesthetics and artificial intelligence perspective, such capability has broad practical applications ranging from video restoration to image enhancement for improved interpretability.

In this project, we will be taking a statistical-learning driven approach in order to solve the problem which we are trying to target. We will be designing and building a convolutional neural network (CNN) which would accept a grayscale image (black-and-white image) as its input and would generate a colorized version of the input image as its output. For this to work, the neural network would be trained on thousands of coloured images and the output generated by it would solely be based on images it has learnt from. This would also remove the intervention of human to generate the desired image. If the neural network gets well trained, then the output should be an image which the user would be looking for.

The main aim of the project is to efficiently as well as accurately convert a given grey-scale image to its corresponding coloured image with the help of various Machine Learning and Deep Learning models such as : Keras, CV(Computer Vision), Numpy, etc along with Auto-Encoders. We want to create a model that will learn on its own with the help of various datasets available and without any human intervention. Another aim is to provide a direct function to convert a grey-scale image to a coloured image which can be embedded with various software in the near future.