Patent Search

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Abstract:

An image enhancement system leveraging the combined power of deep learning and feedback loops to dynamically and adaptively improve visual data. By diving dee contextual intricacies of an image, the system discerns nuanced patterns and features, applying precise enhancements. The iterative feedback loop further refines th enhancements, ensuring that the final output not only meets technical parameters but is also aesthetically and contextually optimized.

Complete Specification

Description:The present invention pertains generally to the field of image processing and machine learning. More particularly, the invention relates to the use of de learning algorithms and feedback loops for adaptive image enhancement based on contextual information extracted from the image. This approach enables dynam modification and improvement of image quality and features based on the specific content and context present in the image, as opposed to traditional, static enhar methods.

Background of the invention:

The proliferation of digital imagery in various sectors, ranging from entertainment to medical imaging, has led to an ever-growing demand for advanced image enhancement techniques. The purpose of these enhancements can vary: for some, the goal is to create a visually appealing image, while for others, it's about bring specific features in an image to aid in tasks such as diagnosis or object detection. Traditional methods of image enhancement, which include techniques such as his equalization, unsharp masking, and adaptive filtering, have been utilized to improve the visual quality of images. These methods, often based on mathematical transformations, are applied uniformly on an image, meaning that they treat every region of the image in the same manner, regardless of its specific content.

The digital age brought forth an explosion of data, with billions of images uploaded to the internet every day. These images are characterized by a vast diversity in t content, quality, and the conditions under which they were captured. Consequently, the traditional one-size-fits-all enhancement techniques, while effective in many scenarios, often fall short when dealing with images that have unique or varied characteristics. Some regions of an image may need different types of enhancemen others, depending on the content and context.

With the advent of machine learning, especially deep learning, there emerged an opportunity to address this limitation. Deep learning, characterized by neural netw

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