# Abstract

Image style transfer is a technique that combines the content of a real photograph with the artistic style of another image to create a new and stylized image. This paper provides a comprehensive review of the field of image style transfer, tracing its development from traditional methods rooted in mathematical models for texture simulation to modern approaches that leverage deep learning and neural networks. The study divides the evolution of style transfer into two main stages: traditional style transfer, which relies on techniques such as texture synthesis and histogram matching, and neural style transfer, which utilizes convolutional neural networks to capture and apply complex artistic styles. The paper also explores the various evaluation parameters used in the field, compares representative achievements, and discusses the practical applications of style transfer in areas such as environmental rendering, font generation, and virtual reality. Finally, the paper highlights unresolved issues and potential directions for future research in the field of style transfer.