Literature Review on Image Generation Artificial Intelligence

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ABSTRACT

This journal present a comprehensive review of the current advancement in artificial intelligence (AI), more specifically in image generation artificial intelligence (AI). The exponential growth in generative AI has lead to significant improvement of the image generation. It has now capable of generating realistic and diverse images across various domains. The review analyses the state-of-the-art models, methodologies, and applications in the field of image generation.

The review commences by delineating the basic principles of artificial intelligence for picture generation, clarifying the progression from conventional techniques to the most recent deep learning-based solutions.

Applications of AI image generating are investigated in a variety of fields, such as virtual worlds, computer vision, art production, and data augmentation. The study focuses on important research that demonstrate how image generating models may be successfully integrated into real-world situations and how this has affected different businesses.

Furthermore discussed are the ethical issues and societal ramifications of AI-generated photos, since the technology continues to spark worries about prejudice, misinformation, and privacy. The analysis ends with an outlook on possible future advancements in AI picture generation, including the incorporation of cutting-edge technologies, interdisciplinary teamwork, and the investigation of open problems in this quickly developing subject.

1 INTRODUCTION

For computer vision and picture synthesis, the development of artificial intelligence (AI) has ushered in a revolutionary era, with image creation AI leading the way. From entertainment and design to healthcare and security, the capacity to independently produce realistic and varied visual information has emerged as a critical capability in many fields. In response to the growing need for complex image synthesis, a wide range of applications have emerged, and this journal review seeks to give a thorough overview of the latest developments in the field of image generation AI. It does this by shedding light on the underlying methodologies, technological developments, and applications.

2 BENEFITS AND LIMITATIONS

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2.1 Limitations and Challenges

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Table 1: Frequency of Special Characters

Non-English or Math	Frequency	Comments
Ø	1 in 1000	For Swedish names
π	1 in 5	Common in math
$	4 in 5	Used in business
Ψ_1^2	1 in 40 000	Unexplained usage

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2.4 Math and Equations

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$$\sum_{i=0}^{\infty} x + 1$$

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$$\sum_{i=0}^{\infty} x_i = \int_0^{\pi+2} f \tag{2}$$

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3 CITATIONS

Some examples of references. A paginated journal article [2], an enumerated journal article [7], a reference to an entire issue [6], a monograph (whole book) [15], a monograph/whole book in a series (see 2a in spec. document) [13], a divisible-book such as an anthology or compilation [10] followed by the same example, however we only output the series if the volume number is given [9] (so Editor00a's series should NOT be present since it has no vol. no.), a chapter in a divisible book [17], a chapter in a divisible book in a series [8], a multi-volume work as book [14], an article in a proceedings (of a conference, symposium, workshop for example) (paginated proceedings article) [3], a proceedings article with all possible elements [16], an example of an enumerated proceedings article [11], an informally published work [12], a doctoral dissertation [5], a master's thesis [4], an finally two online documents or world wide web resources [1, 18].

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