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## Patent Search

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#### Abstract:

A method and system for optimizing the redundant transmission of data messages in communication networks employing machine learning techniques. This invention provides machine learning models trained on historical and real-time data to predict the likelihood of successful data transmission. Based on these predictions, the system dynamically adjusts the level of redundancy applied to each message, ensuring efficient and reliable data delivery tailored to specific network conditions and message importance. Accompanied Drawing [FIGS. 1-2]

#### Complete Specification

Description:[001] The present invention generally relates to the field of data communication and, more particularly, to a method for the redundant transmission of messages using machine learning techniques to optimize and enhance data transmission reliability and efficiency in various communication systems.

#### BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived or pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art merely by virtue of their inclusion in this section.

[004] The realm of data communication has always been in the throes of an unceasing quest for reliability. As our world grew increasingly interconnected and digital, the critical nature of ensuring the integrity and delivery of data messages across communication networks became ever more paramount. Various elements of unpredictable nature, including interference from other signals, network congestion due to high traffic, physical obstructions like buildings or natural barriers, and even unforeseen system failures, could impede or distort the passage of these messages. In response, the redundant transmission of data emerged as a safeguard. This meant that the same message would be transmitted multiple times or via multiple channels, a method ensuring that, even if one or more of these transmissions failed or were compromised, there remained a high likelihood that the intended message would still find its way to its recipient unscathed.

[005] Yet, while redundancy was effective in bolstering the reliability of data delivery, it brought along its set of complications. Each redundant transmission consumed

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