Chapter 2
The Evolution and Development of Artificial Intelligence Interpretation Technology in the Era of Large-Scale Language Models

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ABSTRACT

With the ongoing advancement of artificial intelligence technology, large-scale language models have emerged as a significant breakthrough in the realm of interpreting intelligence. This evolution presents the interpreting profession with unprecedented technological changes. A review of the relevant research indicates that the rise of large models has introduced both new opportunities and challenges for the development of AI-driven interpreting technology. Firstly, the language generation capabilities of these large models are highly advanced, enabling them to produce more accurate and natural interpretation and translation outcomes. Secondly, these models possess strong learning abilities, allowing them to continuously enhance the performance of interpretation systems through extensive data training. Additionally, their rapid response characteristics facilitate efficient interpretation services in real-time scenarios.

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INTRODUCTION

The rapid emergence of generative AI technologies, specifically Generative Pre-trained Transformers (GPT), has significantly reshaped industries worldwide. Companies, both international giants such as Google, Microsoft, and NVIDIA, and domestic powerhouses like Alibaba and Baidu, are intensively investing in the development of large-scale language models. These models are central to the ongoing journey of artificial intelligence (AI) towards achieving universal intelligence. Their potential to revolutionize various sectors, particularly information technology, has led many industry experts to predict that these innovations will transform the landscape of the global information industry. In the context of AI's evolution, the world is moving from an era dominated by data-driven internet technologies and cloud computing, towards a new era—an AI-driven world shaped by the power of large-scale language models like GPT (Seneff, 1992; Acosta et al. 2022; Krishnankutty et al. 2022; Tiwari et al. 2021; Bharti et al. 2022).

Chat GPT, a widely recognized example of such a language model, is designed to understand and generate human-like text by utilizing extensive training data. These models are incredibly versatile, capable of performing a wide array of tasks, including natural language processing, machine translation, sentiment analysis, and more. They rely on deep learning techniques, particularly transformer architectures, which have revolutionized the field of AI. By processing vast amounts of textual data and learning from diverse patterns, these models are able to generate text that mimics human thought and language with remarkable accuracy. As a result, they have become integral to advancing the frontiers of AI and unlocking its potential across industries (Huang et al. 2022).

Large-scale language models like Chat GPT are not only transforming AI research but also leading to profound changes in practical applications. One of the areas where these transformations are particularly noticeable is the field of interpretation and translation technology (Zingoni et al. 2021). AI has made inroads into nearly every aspect of modern society, and interpretation is no exception. The development of machine translation systems and AI-powered translation tools has revolutionized how languages are understood, communicated, and processed. These advancements are reshaping industries such as global communication, cross-cultural collaboration, and information exchange (Cellina et al. 2022; Nor et al. 2021).

The rise of AI in interpretation technology has sparked a significant transformation. The impact is felt across both the upstream and downstream segments of the industrial chain, which includes the development, deployment, and use of translation tools and systems (Ilkka, 2018; El-Meniawy et al. 2022). The applications of AI in interpretation technology are not just limited to translation services but extend to a wide range of related fields, such as real-time communication translation, content

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