


Chapter 3

Unleashing Creativity in Natural Language: An Overview of Prompting Techniques Used in Large Language Models

Lysa Packiam R. S.

 <https://orcid.org/0009-0007-2392-300X>

Anna University, Chennai, India

Abirami Murugappan

Anna University, Chennai, India

ABSTRACT

In today's cybernetic world, Generative AI (GenAI) and Natural Language Processing (NLP) made a vibrant change in the technology. Intertwine between Generative AI and NLP creates a different angle that comes to light. NLP algorithms enhanced by Generative AI not only understands the language but also generates human-like responses, opening doors to more nuanced and context-aware interactions. This chapter focuses on two specific dimensions such as language generation and multi-lingual capability. Large Language Models (LLMs) are considered as a foundational element or backbone for generating texts. Thereby, prompting LLM is a crucial element for generating the desired text. The main aim of this chapter is to explore importance of prompting LLM, various prompting techniques used for interacting with LLM and the frameworks available for accessing the LLM, and issues involved in prompting LLM and their challenges and future directions will also be discussed.

DOI: 10.4018/979-8-3693-8557-9.ch003

Copyright © 2024, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.

1. INTRODUCTION

Generative AI and Natural Language Processing are the mesmerizing fields within the broader empire of Artificial Intelligence (AI). Generative AI is a subfield of AI systems that can create novel, creative content such as text, images, music, etc. based on the training given to them. These systems can generate realistic and creative outputs, sometimes indistinguishable from human-created content. Likewise, NLP is a subfield of artificial intelligence that deals with the communication between machines (computers) and human (natural) language. NLP enables computers to understand, interpret, and generate text in a meaningful and useful way. Figure 1 shows the role of Generative AI in NLP. It has various dimensions such as language generation, conversational agents, data augmentation, multilingual capabilities, creative content generation.

Figure 1. Role of generative AI in NLP (Drawn up by the Author)



Among all these dimensions, this chapter focuses on a prominent domain named language generation. Generative AI tools for text primarily rely on the large language model (LLM). Large Language Models (LLMs) are considered as a foundational element or backbone for generating text with astonishing accuracy and creativity. It acts as a digital wizard that generates human like texts summoned by the user's command. One of the key techniques for harnessing the full potential of LLMs is effective prompting, known as prompt engineering.

39 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/unleashing-creativity-in-natural-language/354603

Related Content

Advanced Analytics and Machine Learning Algorithms for Healthcare Decision Support Systems: A Study

Ketan Sarvakar, Rahul Yadav, Akshita Patel, Chandrakantbhai Devabhai Patel, Kaushik Ranaand Viral Borisagar (2024). *Cybersecurity and Data Management Innovations for Revolutionizing Healthcare* (pp. 16-50).

www.irma-international.org/chapter/advanced-analytics-and-machine-learning-algorithms-for-healthcare-decision-support-systems/351586

A Hyperbolic Arnold's Cat Map-Based System for Multimedia Data Encryption

Amine Rahmani (2021). *International Journal of Multimedia Data Engineering and Management* (pp. 57-71).

www.irma-international.org/article/a-hyperbolic-arnolds-cat-map-based-system-for-multimedia-data-encryption/276400

Towards Fusion of Textual and Visual Modalities for Describing Audiovisual Documents

Manel Fourati, Anis Jedidi, Hanen Ben Hassinand Faiez Gargouri (2015). *International Journal of Multimedia Data Engineering and Management* (pp. 52-70).

www.irma-international.org/article/towards-fusion-of-textual-and-visual-modalities-for-describing-audiovisual-documents/130339

An Image Clustering and Feedback-based Retrieval Framework

Chengcui Zhang, Liping Zhou, Wen Wan, Jeffrey Birchard Wei-Bang Chen (2010). *International Journal of Multimedia Data Engineering and Management* (pp. 55-74).

www.irma-international.org/article/image-clustering-feedback-based-retrieval/40985

A Novel Research in Low Altitude Acoustic Target Recognition Based on HMM

Hui Liu, Wei Wangand Chuang Wen Wang (2021). *International Journal of Multimedia Data Engineering and Management* (pp. 19-30).

www.irma-international.org/article/a-novel-research-in-low-altitude-acoustic-target-recognition-based-on-hmm/276398