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**A Comparative Study of Code Generation using ChatGPT 3.5 across 10 Programming Languages**

**Keywords Specific :** ChatGPT, Large Language Models, Coding, Programming Languages, Artificial Intelligence, Reinforcement Learning from Human Feedback, transfer learning, fine-tuning.

**Article-3**

The paper represents an in-depth study of the use of large language models such as ChatGPT 3.5 for computer code generation. It provides an overview of the capabilities of large language models in general, as well as the specific performance of ChatGPT 3.5 in generating code in 10 different programming languages and 4 different software domains. The study aims to identify the strengths and limitations of these models in code generation, as well as proposing avenues for future development and examining the implications of automated code generation on the technology industry.

The paper begins by explaining the fundamental concepts of natural language processing by computers, focusing on the role of large language models, their training process, and the benefits of transfer learning for these models. It also outlines the broad applications of these models, including the creation of computer code, and mentions ChatGPT 3.5 as one of the most notable models with impressive code generation capabilities.

The study then focuses on a comparative analysis of ChatGPT 3.5's performance in code generation in different programming languages. The aim is to understand the fundamental characteristics that make some languages more suitable than others for code generation. The main contributions of the study include a challenge to ChatGPT 3.5's code generation capabilities across 40 coding tasks, a comparative analysis of the model's performance in the selected programming languages, and the identification of the model's limitations with avenues for future research.

Finally, the paper offers a section on the concepts of generative artificial intelligence, highlighting recent advances in this field, in particular with generative adversarial networks. It gives the reader an overview of the technologies underlying the study and the concepts of generative AI.

In sum, the paper presents an in-depth analysis of ChatGPT 3.5's capabilities in generating computer code across a variety of programming languages, highlighting the implications of these capabilities for the technology industry and suggesting avenues for future research.