

UTILIZING ARTIFICIAL INTELLIGENCE IN SOFTWARE DEVELOPMENT

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Today, artificial intelligence is an integral part of our lives. It is used for everything from providing helpful advice for daily routines to developing complex software products.

Let's explore how artificial intelligence can be utilized in learning programming and its subsequent application as a powerful assistant for professional developers.

There are many different LLMs (Large Language Models) available today. Currently, Claude is considered the most powerful and popular choice among programmers for writing code. First, let's define what an LLM is: A large language model (LLM) is a type of artificial intelligence (AI) program that can recognize and generate text, among other tasks. LLMs are trained on huge sets of data – hence the name «large». LLMs are built on machine learning: specifically, a type of neural network called a transformer model [1].

While models like ChatGPT and Gemini are widely used, Claude is often the preferred choice for programming tasks. What is Claude? Claude is a family of proprietary large language models (LLMs), as well as an AI assistant and other AI tools powered by those models, developed by Anthropic. Claude models, particularly from their third generation onward, have consistently ranked among the top performing generative AI models available on the market [2].

Research across various models has shown that Claude often delivers the most effective results. For students learning to code, Claude can be used to:

- Create structured study plans.
- Master the fundamentals of programming.
- Explore various libraries and frameworks.

Similarly, professional programmers integrate Claude into their workflow to enhance their own skills. This synergy optimizes work, increases efficiency, and minimizes the risk of critical errors. To achieve the best results, a programmer must learn how to formulate task requirements correctly. In the world of AI, this is known as a prompt, or more specifically for development, Prompt Programming. It is a new paradigm in software development, where programs are created through the use of text-based instructions, known as prompts.

Instead of writing code in a programming language, you describe to the model in natural language what you want it to do. The model then generates the corresponding code.[3]. The more precise the prompt you create, the higher the quality of the resulting code. Furthermore, Claude can independently review code written by a programmer, identify errors, and suggest improvements.

Artificial intelligence is constantly evolving. To remain an effective professional in the programming field, you must continuously acquire up-to-date skills to minimize development time. Therefore, mastering prompting is one of the most vital tasks in our modern reality.

References:

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