





























## ***Appendix A - Popular GenAI Tools for Software Engineering Tasks***

Most studies believe that success with GenAI tools for software engineering tasks is more likely if more than one tool is used. Care should be taken to identify multiple tools that complement one another rather than excel at the same types of capabilities:

- **OpenAI's ChatGPT** is a free app that was instrumental in the recent surge of GenAI awareness. It is able to generate code snippets, translate code to new language, refactor code for optimization, and automate rote tasks.
- **Google Bard** is a free coding assistant that can code in 20 programming languages including Python, Java, C++ and Javascript. It can generate code from prompts, document code that is pasted into its UI, and refactor code.
- **GitHub Copilot** is designed to be an AI pair programmer. It uses OpenAI Codex which was trained on billions of lines of code and is designed to write functional code in languages such as Python, GO, PHP, Ruby, and Swift. It can be integrated into a development environment and thus has access to users' architecture, style, and conventions.
- **Amazon Code Whisperer** is also trained on billions of lines of publicly available code, as well as Amazon code. It is quite similar to GitHub Copilot in capabilities but is optimized for AWS API's such as Ec2, Lambda, and S3 infrastructure types.
- **Tabnine** is an AI coding assistant that uses OpenAI Codex to generate code suggestions. It autocompletes code or functions, matching the style and conventions of existing code based. It is popular because it integrates into a wide variety of development environments.
- **CodeWP** has been designed and trained explicitly to generate PHP, Java and jQuery compatible with WordPress, its plugins, and its database.
- **CodeSquire** is a tool that brings AI coding assistance to different applications. It uses Chrome Extension to bring its AI features to Google CoLab, Big Query, and Jupyter Lab. Designed for data scientists, it turns prompts into code, writes Structured Query Language (SQL), completes lines of code, and generates new functions.
- **What the Diff** is designed to help teams review code and create better documentation. It can be integrated with GitHub or GitLab repositories. When code is committed, it creates a natural language summary of the differences between the new and old code. This includes an accurate summary of what code has changed and what it has done.
- **AI Query** turns plain English into SQL queries, as well as translate complex SQL queries back into English. It currently supports PostgreSQL, MySQL, MariaDB. And MS SQL Server.
- **WatsonX** is a code assistant powered by state-of-the-art code, only based on Large Language Model (LLM), trained in 115 different programming languages, and 1.5 trillion tokens of code used to recommend code.
- **Microsoft Sketch2Code** generates HTML5 from a hand-drawn user interface sketch.
- **Carnegie Mellon's PolyCoder** performs code autocompletion, generates code from comments, performs pair programming, and unit tests.