
IBM OPEN SOURCES GRANITE CODE MODEL

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MAY 12, 2024

CONTEXT

IBM is [releasing](#) its Granite code models to the open-source community, aiming to simplify coding for a broad range of developers. The Granite models, part of IBM's wider initiative to harness AI in software development, range from 3 to 34 billion parameters and include base and instruction-following variants.

The Granite models are optimized for tasks such as code generation, bug fixing, and code explanation and are designed to enhance productivity in software development workflows.

BACKGROUND: WHAT ARE GRANITE MODELS?

IBM's Granite code models are a sophisticated family of large language models (LLMs) specifically designed for software development tasks. These models are part of IBM's broader initiative to enhance developer productivity and streamline the coding process through the application of AI.

Here are the key features and aspects of the Granite models:

1. **Variety of Sizes and Types:** The Granite models range from 3 billion to 34 billion parameters, offering various capabilities to suit different computational needs and application scenarios. This includes base models for general coding tasks and instruction-following models that are fine-tuned to execute specific directives more effectively.
2. **Trained on Diverse Codebase:** These models are trained on a rich dataset from CodeNet, which includes 500 million lines of code across more than 50 programming languages, along with code snippets, problems, and descriptions. This extensive training helps the models understand and generate code more accurately and effectively.

3. **Wide Application Spectrum:** The Granite models enhance a range of coding tasks, including code generation, bug fixing, legacy code translation, code explanation, and documentation. They can modernize applications by translating outdated languages like COBOL into modern languages like Java, which is crucial for maintaining and updating legacy systems.
4. **Integration into Development Environments:** IBM has integrated these models into various development tools and platforms, enhancing their functionality and aiding developers in real time.
5. **Ethical and Responsible AI:** The training of the Granite models adheres to IBM's AI ethics principles, ensuring that the development process respects privacy, security, and fairness standards.
6. **Platform Availability:** The models are accessible on multiple platforms, including GitHub, Hugging Face, watsonx.ai, and Red Hat's RHEL AI. This broad availability ensures that developers and researchers can easily incorporate the Granite models into their projects.

IBM's Granite models are versatile, powerful tools for improving the efficiency and effectiveness of software development, embodying IBM's commitment to advancing AI in coding while maintaining high ethical standards.

OPEN-SOURCING GRANITE CODE MODELS

The Granite models vary in complexity and size, ranging from 3 billion to 34 billion parameters, catering to different computational needs and scenarios. This includes base models for general tasks, and instruction-following models fine-tuned for specific instructions. By making these models available to the public, IBM is providing tools that were previously confined to high-resource settings, making advanced coding assistance accessible to a broader range of developers and researchers.

The open-sourced models are available on several platforms, including Hugging Face, GitHub, watsonx.ai, and RHEL AI, Red Hat's platform for developing and deploying generative AI models. This wide availability encourages innovation and practical application in various settings, from enterprise software development to academic research.

IBM's open-source initiative is guided by its commitment to ethical AI. It ensures that the models are trained on responsibly curated data and adhere to legal and ethical standards. The models are released under the Apache 2.0 license, allowing wide use and modification without significant restrictions.

This strategy not only advances IBM's position in AI and coding but also aligns with broader industry trends towards open innovation. It enables the community to build upon and improve the models, potentially leading to new breakthroughs in software development technology.

ANALYSIS

The Granite models are engineered to enhance productivity by automating routine and complex coding tasks. This speeds up the development process and allows developers to focus on more creative and strategic aspects of software creation. For enterprises, this means faster time-to-market and improved software quality.

In making these powerful tools available on popular platforms such as GitHub, Hugging Face, watsonx.ai, and Red Hat's RHEL AI, IBM broadens the potential user base and encourages collaborative development and customization of these models.

Moreover, the potential for innovation is limitless. With the community now able to modify and build upon the Granite models, new applications and tools are likely to emerge, some of which may redefine current standards and practices in software development.

The implications of this move are profound. First, it significantly lowers the barrier to entry for using state-of-the-art AI tools in software development. Startups and independent developers can now access the same powerful resources as large enterprises, leveling the playing field and fostering a more vibrant and innovative development community.

IBM's approach not only broadens the accessibility of advanced coding tools but also fosters an inclusive environment for developers of various skill levels and resource availabilities.

From a competitive standpoint, IBM is positioned as a leader in AI-powered coding, directly challenging other tech giants exploring similar territories. However, IBM may still need to commit to open-source models. Making the Granite models available on popular platforms like GitHub and Hugging Face ensures IBM's presence in developers' day-to-day tools, increasing its influence and visibility in the software development community.

IBM's impact on enterprise efficiency and developer productivity enabled by the now open-source Granite models may be substantial. The models set a new benchmark for AI integration in software development tools, benefiting developers across industries.



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