AI-ENABLED SOFT-WARE DEVELOP-MENT

Create Smarter Software by Understanding AI

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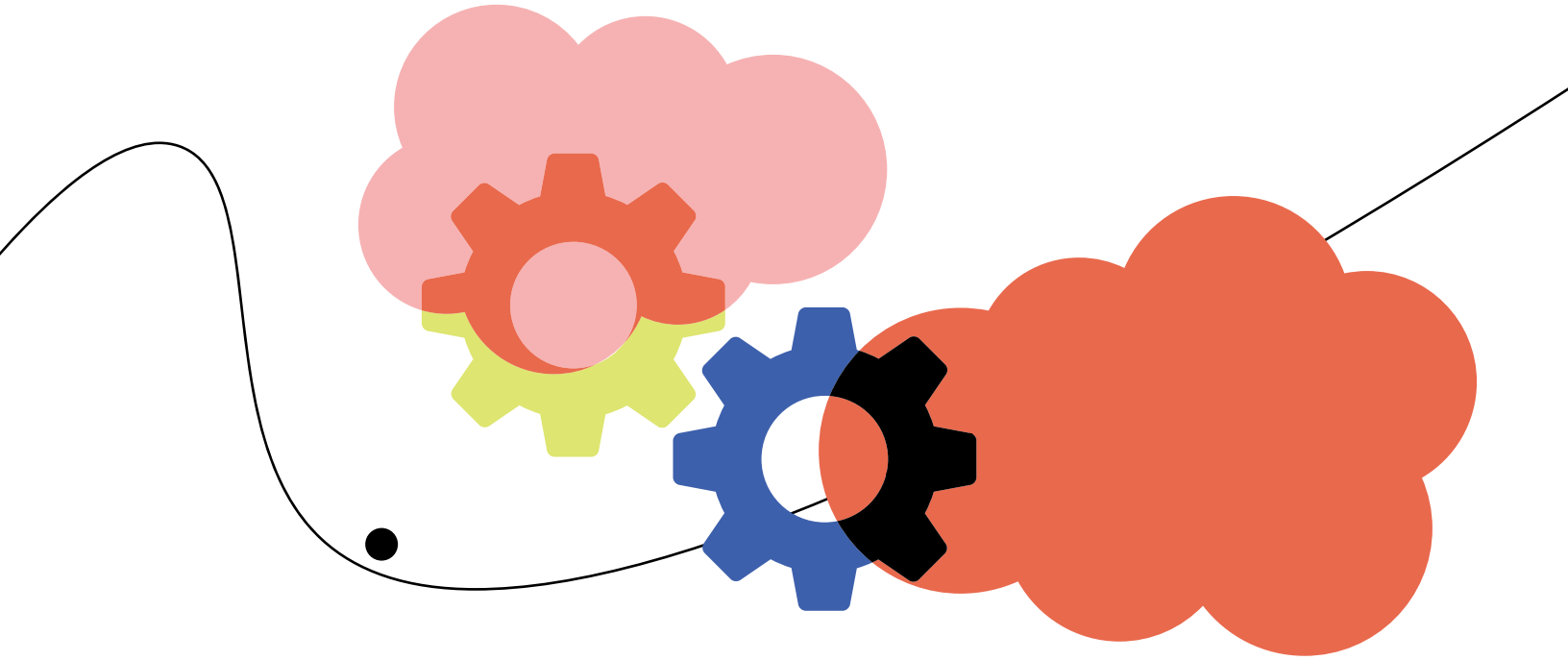
softserve

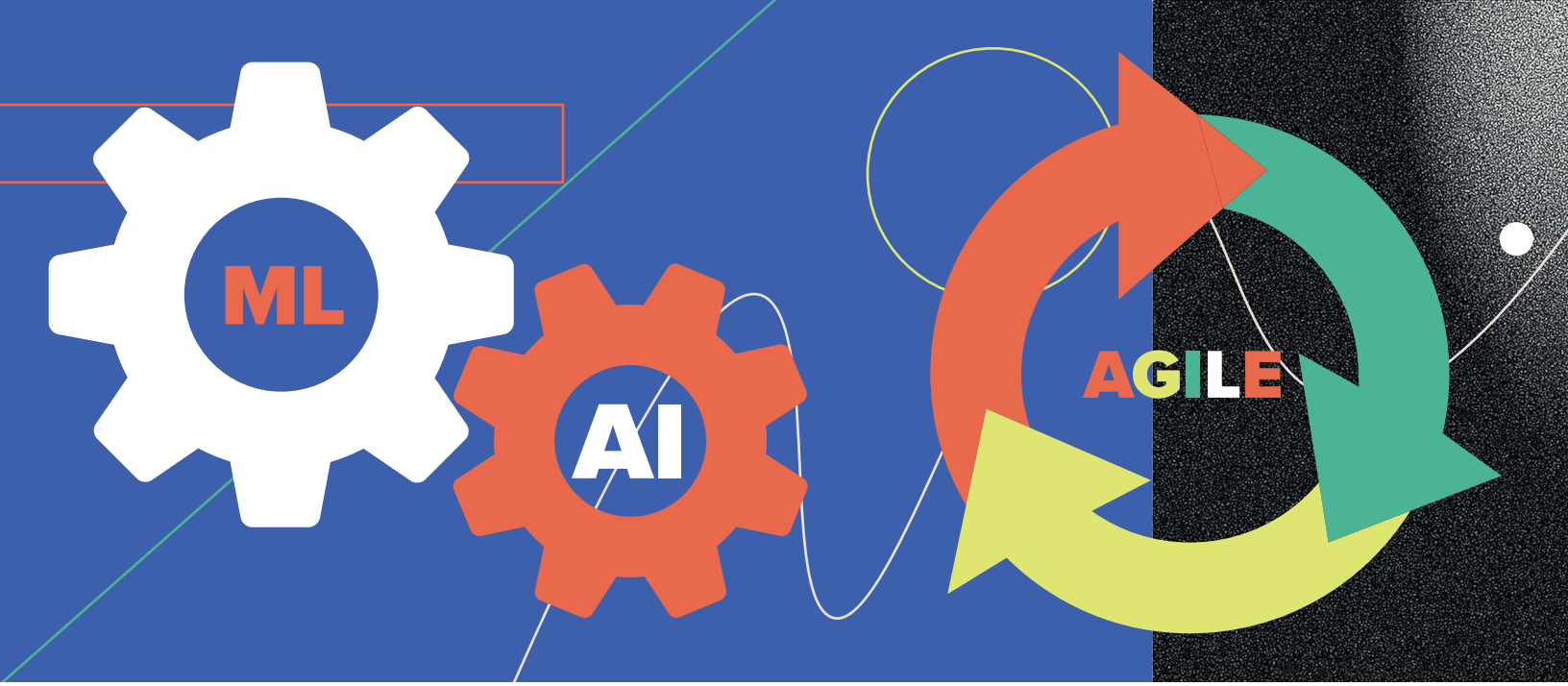
To meet the demands of increasingly digitally connected customers, software companies must act on rapid behavioral changes to develop and release products with speed and accuracy. Traditional software development is not designed to support these changes, involving a series of successive stages including manually writing code, preparing requirements, designing software, and testing to establish that the final product meets specifications. Artificial intelligence (AI) is disrupting this process by creating scalable and efficient workflows to drive productivity and reduce time-to-market. Though many software companies are still in the early stages of AI application, the use of the technology is growing steadily across the enterprise. According to the market research firm Tractica, revenue from the application of AI tools worldwide is expected to reach $119B by 2025.

AI algorithms and advanced analytics allow software development teams make instant decisions using real-time data at scale. Unlike machines that react to rules-based logic or deliver pre-determined responses, AI applications perform complex and intelligent functions associated with human thinking. By capturing and analyzing data from a variety of sources—including microchips, sensors, and remote inputs—AI algorithms can automate the coding process by using that data to help developers create accurate code, leading to more efficient, agile, and scalable workflows.

AI is not a replacement for human intelligence; on the contrary, AI perpetually learns and delivers human interactions, while helping software development teams save time by eliminating human error associated with redundant tasks.

Let's explore four key ways that AI can further help to streamline the software development process:





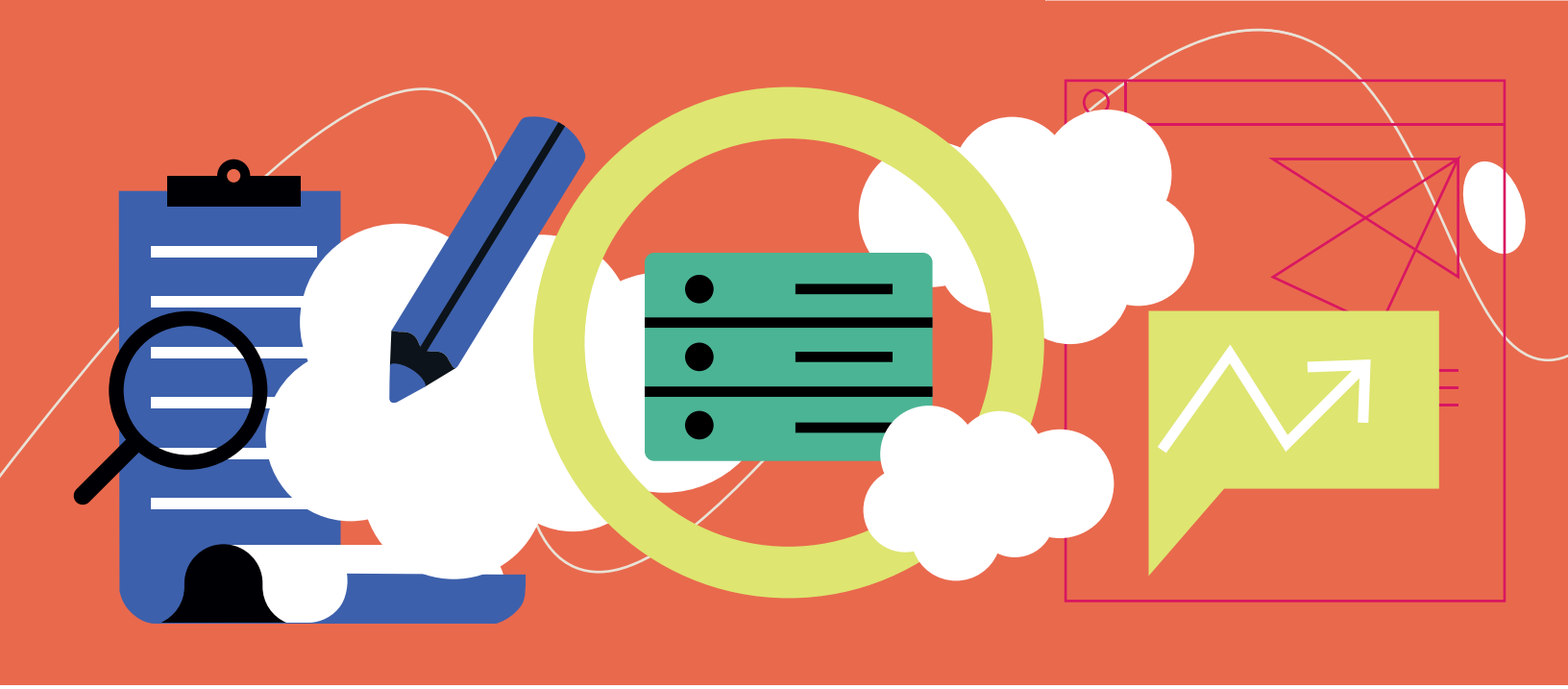
AGILE PROJECT MANAGEMENT

The benefits of efficiency gained by applying AI extend beyond routine task management. For example, developers spend significant time manually managing coding documents, leading to the risk of coding typos or other similar errors. By recognizing and tracking historical coding patterns, AI- and ML-enabled algorithms can help software companies cut down on documentation time. This computer-assisted technology can also improve real-time communication by ensuring project team members across departments and geographies digitally receive an accurate coding and testing history.

AI supplements and streamlines workflows in software development, removing frustration from the development or testing process.

The application of AI in software development can help developers become more agile in the way code is written, tested, and delivered to production teams. AI algorithms can be used to improve project timelines, cost estimates, and volumes—such as enabling development teams to prioritize sections of code needing early completion, and becoming more precise in defining potential failure rates.

AI/ML algorithms proactively search larger code databases looking for abnormalities, communicating possible future steps to developers for prevention. Abnormalities may include missing code, bugs, or alternative product or service names under the same code. This is not only useful in recovery—the analysis of information may assist with pre-diagnosis of errors.



AUTOMATE SOFTWARE DESIGN

Designing software code is an essential, complex, and demanding stage of the development process, particularly for teams located across geographies. Planning and designing a project requires developers, designers, R&D, and marketing teams to work collaboratively by being transparent and communicating effectively. Whilst all of this is done manually, AI/ML algorithms can help to streamline and automate the planning and designing process by gathering data such as names of project stakeholders, location, customer needs, products, and type of business to auto-create intuitive instructions on what design approach to take without requiring manual intervention. This is can help automate the code design process, saving programmers time, effort, and money.

An example of AI helping to create software design is the Artificial Intelligence Design Assistant (AIDA). This is a website building platform that rapidly examines data provided by a user to create a web design customized to a user's desires. AIDA automatically recommends and applies code for design components, colors, and layouts most ideal and appropriate for each website.

STREAMLINE SOFTWARE TESTING

Testing is the core part of every software delivery cycle. The detection and prevention of errors or bugs is a major challenge for development teams. A significant amount of software development costs consists of fixing bugs and errors. Early error detection requires constant monitoring throughout the development life cycle. However, current software testing practices are costly, inefficient, and time-consuming because in many cases errors are found in the code after the product has been developed and delivered to the mass market.

Trained AI and ML algorithms can ensure the testing performed is error free in less time than manual testing, freeing code testers to focus on more important tasks such as maintaining code. AI-enabled code testing prototypes allow development teams to carry out mass testing on thousands or millions of code. Development teams can tackle case-specific tests while AI-assisted automation tools can handle repetitive and time-consuming tests. This ultimately results in a lowering of errors because AI-assisted tests scope and fix errors with sheer precision, leading to an increase in overall improvement of software quality.

For example, DeepCode assists developers to rapidly test and release working code with AI-enabled cloud testing. Software testers use a template test plan with parameters, and apply the code to an AI tool, which automatically converts the code into a functional test case and fixes specific bugs. Engineers are instantly sent approval requests for bug fixes, and eventual

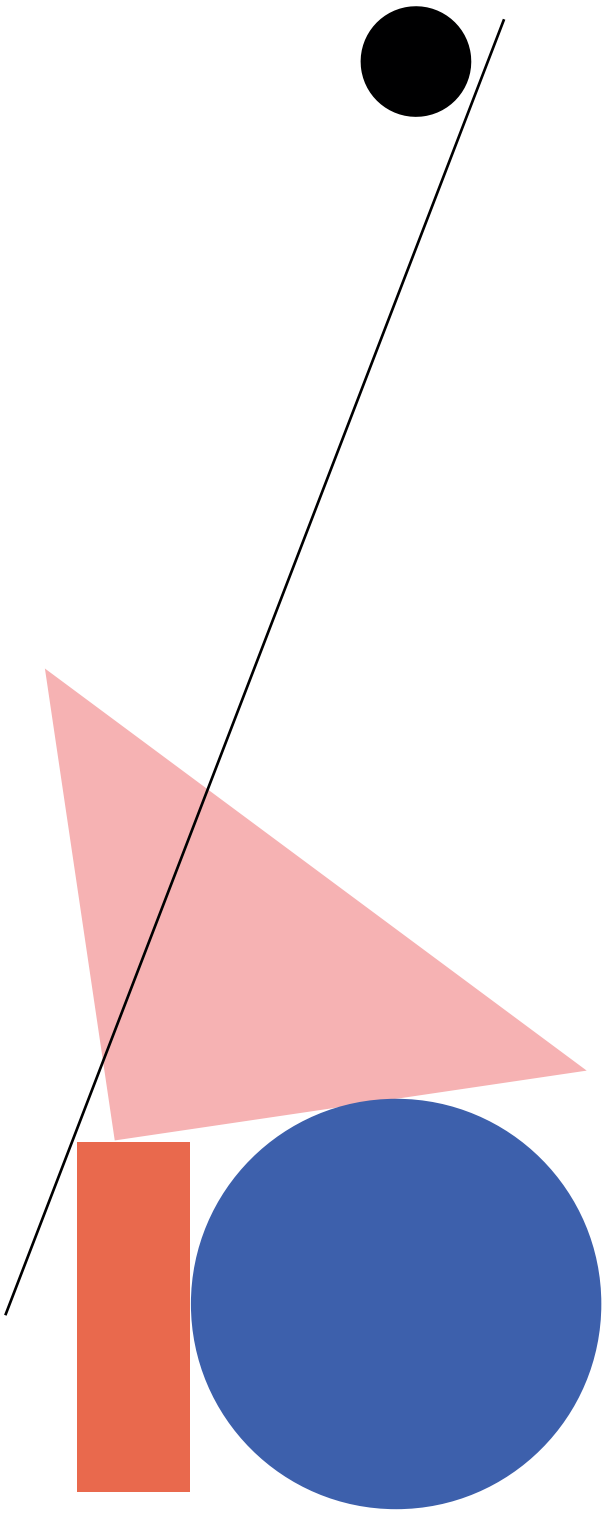
deployment to production. This not only saves time, money, and resources, but also generates a high ROI for the business.

Coding a large and complex project with multiple stakeholders is often labor intensive and time-consuming. AI coding assistants can greatly reduce the workload of development teams, while increasing efficiency. These intelligent applications, such as Kite for Python, can help with routine but important coding tasks to save time and reduce coding errors. This AI-based intelligent programming assistant studies historical errors and bugs discovered in software code to flag prospective new bugs in real-time, as new code is written. Developers can maximize productivity by focusing on more creative and strategic tasks, such as improving user experience.

ENHANCE DECISION MAKING

Software developers spend a considerable amount of time and money making crucial decisions about which features to include in a product. AI can speed the decision-making process by analyzing the performance of existing applications and prioritizing products and features for future development. Software companies are able to quickly make data-driven business decisions at scale, maximizing impact in-market and increasing revenue.

Software development teams can use the AI Canvas tool to consider how AI may help them make tactical decisions. The canvas helps development teams organize and identify key questions and viability challenges related to creating and deploying AI/ML models in the development process. AI can also analyze the success of past development projects and released products, helping software companies to focus key resources on projects and delivering higher ROI.



THE FUTURE OF DEVELOPMENT

AI has enormous potential to reshape the future of software development. The availability of AI-enabled solutions allows software companies to deliver customer-driven experiences by providing application strategy according to business needs. SoftServe delivers complex, integrated applications—driven by AI and ML—while ensuring adherence to privacy regulations and requirements. Let SoftServe help you accelerate AI-driven software development for the future.

Contact SoftServe today.

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SoftServe delivers open innovation—from generating compelling new ideas, to developing and implementing transformational products and services.

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