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A Review on Revolutionizing Test Case Generation: Integrating AI and ChatGPT for Enhanced Software Testing

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Abstract: *Using artificial intelligence (AI) and language models like ChatGPT is changing how we test software. Traditional methods of creating test cases often take a long time, can have mistakes, and might not cover everything. This paper looks at how AI and ChatGPT can solve these problems by automatically creating detailed test cases, quickly adapting to changes, and finding risky parts of the code. AI-driven testing makes regression testing more efficient, increases overall test coverage, and allows for continuous testing with self-healing features. By automating repetitive tasks and generating realistic test data, ChatGPT saves time and improves the accuracy and thoroughness of testing. The paper delves into how AI algorithms can analyze vast amounts of code and user interactions to identify potential test scenarios that might be overlooked by human testers. ChatGPT, with its advanced natural language processing capabilities, can assist in creating detailed and contextually relevant test cases based on user requirements and specifications. Furthermore, the review highlights the benefits of this integration, such as reduced testing time, improved coverage of test scenarios, and the ability to quickly adapt to changes in the software. It also addresses potential challenges, including the need for high-quality training data and the importance of maintaining the security and privacy of the software being tested*

Keywords: Artificial Intelligence (AI),ChatGPT Test Case Generation, Software Testing ,Test Automation ,AI- driven Testing

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