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(57) Abstract :

The present invention discloses an AI-based code analyzer for automated bug identification, comprising a code input interface (101), preprocessing and tokenization module (102), semantic analysis engine (103), machine learning bug predictor (104), contextual explanation generator (105), feedback learning module (106), and IDE integration layer (107). The system leverages artificial intelligence to detect syntactic and semantic bugs in real-time, generate contextual explanations, and evolve continuously through developer feedback. It significantly reduces debugging time, improves accuracy, and ensures language-agnostic scalability, thereby enhancing software reliability and developer productivity.

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