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(57) Abstract :
The present invention discloses a computer model (100) for optimized software compiler performance that integrates static and dynamic optimization strategies. The system comprises preprocessing unit (120), optimization engine (130), workload profiler (140), machine learning predictor (150), and adaptive feedback module (160). Source code (110) is compiled into optimized machine code (170) through predictive analysis and feedback-driven just-in-time optimizations. The invention improves execution speed, memory efficiency, performance portability, and adaptability across heterogeneous computing architectures. This enhances compiler performance while reducing developer intervention and ensuring efficient program execution.

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