DOI: doi.org/10.47363/JAICC/ICADCCS2026/2026(5)8

International Conference on AI, Data Science, Cybersecurity, Cloud Architectures, and Software Engineering

Conference Proceedings April 23, 2026 - (Virtual)

Agentic AI Revolutionizing Software Engineering

Akhila Harinarayana

Principal Analyst Nelson Hall Bangalore, India

Abstract

Agentic AI marks a paradigm shift in software engineering, empowering autonomous agents to independently pursue goals, reason through complex decisions, and execute multi-step workflows with minimal human intervention. Unlike reactive AI assistants, these systems—powered by advanced large language models—proactively handle code generation, debugging, testing, and deployment, dramatically compressing development cycles while elevating code quality.

Agentic AI agents excel in complex tasks like code generation, debugging, and testing. They interpret requirements, generate structured code scaffolds, and self-validate through feedback loops, reducing development cycles significantly. For instance, multi-agent systems collaborate—one agent designs architecture while another handles refactoring and compliance checks. In practice, these agents integrate into CI/CD pipelines, managing builds, deployments, and optimizations autonomously. They analyze real-time data from code quality metrics, user feedback, and performance telemetry to prioritize features or detect technical debt preemptively.?

However, challenges persist in terms of ensuring ethical decision-making, handling edge cases in open-ended problems, and integrating with legacy systems – necessitating human-AI models.