Integrating ChatGPT into Software Development: Valuating Acceptance and Utilisation Among Developers

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Abstract

This study examines software developers' acceptance and utilisation of ChatGPT, analysing its potential as an AI-driven programming assistant. Using the UTAUT2 framework and judgmental sampling, data was gathered from 335 developers over six weeks, starting in April 2024. The research assesses ChatGPT's impact on developers' workflows, focusing on determinants like Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions, with additional consideration for Personal Innovativeness. Structural equation modelling reveals that Facilitating Conditions and Hedonic Motivation significantly influence developers' Behavioral Intention to use ChatGPT. Findings indicate developers view ChatGPT as a tool that enhances productivity and enjoyment in coding tasks, yet concerns remain about potential dependency and the AI's reliability. Moderating effects of Gender and Experience show nuanced influences, with experienced developers more inclined toward innovation. This research provides valuable insights for optimising ChatGPT integration, underscoring the importance of supportive resources and further refinement of AI tools in development contexts.

Keywords: Chat GPT, AI Acceptance, Developer Productivity, UTAUT2, Software Developers, PLS-SEM

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