Abstract

An AI-driven system for real-time guidance of software developers is disclosed. A client agent continuously captures screen images from a coder's workstation, performs on-device optical-character-recognition and computer-vision analysis, and derives context labels that describe active code files, applications and websites without transmitting raw pixels. The agent fuses the derived context with electronic task data retrieved via APIs from external project-management and version-control systems. A machine-learning engine compares the fused context with expected tasks to detect misalignment, inefficiency or idleness and autonomously generates feedback. Notifications are delivered through an integrated-development-environment plug-in, system-tray alerts or chat-bot messages; thresholds and messaging tone adapt to each user's historical behaviour. Optional modules automate creation and updating of Kanban task cards. The modular architecture operates as a standalone platform, as a plug-in to third-party monitoring software, or in hybrid configurations, enabling privacy-preserving, context-aware productivity optimisation for remote and on-site coding environments.