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CodePilot: AI-Powered Code Editor with RNN-Driven Summarization

Abstract: CodePilot is an advanced code editing platform to facilitate software development with real-time collaboration and AI-powered insights. CodePilot is an application that supports multiple programming languages to speed up coding efficiency. It supports live code sharing, real-time editing, and role-based access (Editor and Viewer). There is integrated communication in the form of in-app chat to provide seamless team interaction and better project coordination. One of the highlights of CodePilot is its AI-driven code summarization, which uses Graph Attention Networks and RNN-based sequence models to produce short, natural-language descriptions of code functions and logic. Through the integration of structural and semantic analysis, this feature improves program understanding and enables effective software maintenance. In addition to this, the live code-watching feature of CodePilot allows users to watch real-time coding sessions with team members, enhancing transparency and improved collaboration within team-based projects. With the combination of state-of-the-art AI and collaborative coding tools, CodePilot presents an end-to-end solution that increases team efficiency, improves code quality, and simplifies the software development process.

Keywords: Graph Attention Networks (GAT), RNN Sequence Models, Semantic Code Analysis, ,Seq2seq model,Socket.io.

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