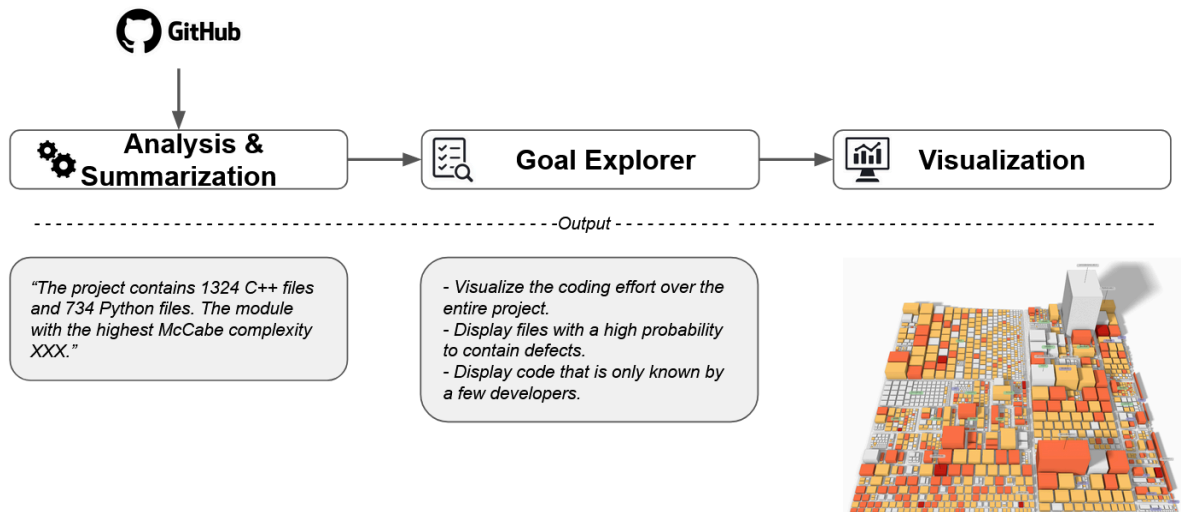


Visual Software Analytics using Large Language Models

Computer Graphics Systems

Prof. Dr. Jürgen Döllner



The advancements in the field of Large Language Models (LLMs) are prompting a reconsideration of traditional paradigms in exploratory data analysis. For instance, LLMs enable novel user interactions and provide assistance in selecting visualization techniques. This project aims to explore the potential applications of LLMs in visual software analytics for supporting program comprehension tasks. The project will specifically analyze selected software projects, such as open-source projects on platforms like GitHub. Our system is built up from three components as illustrated above. The analysis and summarization component measures aspects related to the complexity and quality of a software project and uses an LLM to generate a natural language summary. The goal explorer component proposes queries related to the generated results files. To gain deeper insights into complex code structures, the visualization component generates configurations for visualizations to present results in an easily understandable manner. At every juncture, the user can interact with the system through text input, thereby reducing system and user-related barriers, requiring less prior knowledge, and facilitating easier access to information.

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