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The Practice of Link Sharing in Code Review

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内容梗概 (1ページ目に収めること)

Code review (CR) is the cornerstone for software quality assurance and a crucial practice for software development. From being a formal code inspection process, nowadays Modern Code Review (MCR) becomes more flexible with asynchronous collaboration through online review tools. Not only improving the quality of code changes, but MCR also serves as a mechanism to increase awareness and share information. Literature review points out that an effective review requires proper understanding. However, it is challenging to identify and acquire the needed information to have a proper understanding to conduct a review.

This thesis presumes that the practice of link sharing can help developers fulfill the information needs in the review process. To address this, first, an empirical study is carried out to explore the prevalence of link sharing, investigate its effect, and qualitatively analyze the intentions. The results show that link sharing is increasingly used, the number of internal links has a positive correlation with the review time, and the intention is often used to provide context understanding. Second, a study is conducted to explore the cross-patch collaborations via patch linkage, and the results reveal that the collaboration contributions are not trivial like voting. Third, this thesis proposes an automatic patch linkage detection model to aid link sharing. The evaluation results show that patch linkage detection is promising, especially for Alternative Solution Linkage.

In all, this thesis emphasizes the role of link sharing in fulfilling information needs during the review process. Furthermore, this thesis provides practical implications to improve the review efficiency and the potential to facilitate the existing code review tools.