Exploring Research Opportunities to Apply Data Mining Techniques in Software Engineering Lifecycle

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Abstract:
This Software engineering (SE) is the core research area of the software industry, and numerous algorithms and frameworks are proposed every day. Software Engineering is the discipline that keeps up with recent developments in fields and techniques such as data mining, machine learning, natural language processing, and artificial intelligence. It is difficult to manage such a massive amount of data in a software engineering repository if data processing and big data analytics are not available. This paper provides an in-depth study of data mining techniques that to improve the efficiency of the software development lifecycle. The study emphasizes the practical applications and discoveries made by text mining, clustering, classification, and other methods.

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Software engineering developments emerge continuously with trendy techniques and algorithms, and they reshape their core techniques, often with modern research areas on the far side of the imagination [1]. At the same time, due to a large volume of data and rapid development scenarios, it leads to complexity, faults, and increased development cost. Adaptation of software engineering with completely different research domains is crucial, especially in modern research domains like data mining, big data, Machine Learning and AI. Among these areas, data mining is giving plenty of contribution to all or any of the development phases than different domains [2]. The objective of data mining is simple, discovering the hidden knowledge from the huge volume of data. Data mining techniques can extract information from both structured and unstructured sources [3]. Even data mining is the origin of big data and web mining. Classification, clustering, and association are effective techniques that are wide exploitation applications and research areas.

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