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AI Supports Software Engineering Tasks in Large Applications

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ABSTRACT:

Software engineering data mining is done in reusable components in software development. Artificial intelligence enhances software engineering tasks in large ap plications. Knowledge discovery skills are combined with data discovery and cognitive skills to gain experience in software engineering. The combination of AI a nd data mining supporting software engineering practices results in intelligent software. This paper analyzes three AI technologies that use data mining, business i ntelligence, and machine learning to support software reuse in software development and complete software maintenance. Business intelligence tools are used to discover the correct figures for demand and renewal. Business Intelligence (BI), Software Intelligence (SI).

I. INTRODUCTION

Software engineering projects involve various activities at each stage of the software development life cycle (SDLC). Many documents are used only to extract important information from the data obtained during the SDLC process. This article describes various AI techniques used in the automation of r eusable software development. AI technologies such as neural networks, fuzzy logic, intelligence-
based systems, information retrieval, etc. As the size of the software increases, the complexity increases, and the time and cost of developing the entire software also increases. A lot of knowledge is created in each phase of the SDLC. The knowledge developed in the system and software design phases i s reused throughout the software architecture and design. However, integrating intelligence into the development process can improve the overall softw are development, reuse processes, and support the automation of organizational structures. This article aims to introduce various aspects of artificial int elligence in the field of software reuse in software engineering to support software intelligence. The last section introduces the most important techniqu es related to software reuse and software engineering fields. Felder et al. Application Level Artificial Intelligence (AISEAL) taxonomy aims to classify applications according to the content of AI applications, the type of AI technology used, and their applications. This proves that intelligence is a useful t opic in software engineering research and that deep learning can help solve many problems and concerns in software engineering. Consider new knowl edge in software engineering, such as software design planning and work management, software development, and software security [3]. Therefore, kn owledge discovery through intelligence is very important for software reuse and design in software engineering. This paper is divided into five sections. Section 1 introduces and discusses the importance of artificial intelligence in software engineering. The importance of intelligence in software engineer ing and data mining is discussed in Section 2, where intelligence and business and their importance in software development in general are discussed. S ection 3 introduces the use of intelligent software and the use of reusable software in software development. Chapter 4 discusses various issues related t o software implementation;

II. Artificial Intelligence thiab Data Research hauv Software Engineering

Data mining in software engineering has become a good place to extract important information from different types of software repositories to solve sof tware engineering problems. Many applications of AI use data mining in software engineering. However, integrating business intelligence with softwar e development is still a research area for software intelligent task automation. There are many business intelligence tools to support software developme nt in enterprises today. Harman's approach to software engineering is based on intellectual research, emphasizing the work of projects. Software Engine ering and Performance of Software Engineering Field [7]. In the software field, it combines the three most important researches of software program en gineering, data mining and artificial intelligence to help the concept of software program intelligence, realizes the study of a complete software develop ment system.

A. Knowledge of software mining architecture

Understanding and discovering engineering knowledge in software program repositories has been a very interesting and popular research topic in solvin g various software engineering problems. Mining software program engineering data and other software program indicators, Cyclomatic complexity, C ycle density, LOC routine, LOC executable file, LOC annotations, LOC code and annotations, LOC gaps, various traces, Counting as software program indicators such as nodes, also, Weight method by inheritance, NOC child category, Combination power of classes, Project class, Group reaction, Path l ove technology, Loss of brotherly love, Hidden things, Technology inheritance, Polymorphic things, Diversity combined things are widely used. In soft ware reuse for maintenance, methods and mining research ideas, there are character interfaces, category sizes, instruction types, etc. of software at the e dge [15]. Knowledge models based on graphs provide rich resources for the integration of artificial intelligence and software engineering to achieve the reuse of functional components. Business intelligence is similar to software programmatic intelligence; because both systems are designed to integrate artificial intelligence to influence the successful selection of companies and software respectively.

B. Business intelligence in software engineering

Future studies in Artificial Intelligence and Software Engineering include Business Processes, Modeling of Real World Objects (such as Technologies, Shiny or Standard Structures). Teams Software Engineering, Intelligence, Computer Skills and Software Engineering are important topics in both cours es. [8]. Business intelligence includes software engineering skills that will lead to the automation of the software development process. Figure 1 below provides a way to achieve software intelligence by searching for information from software engineering documents. This will lead to intelligent automa tion of software engineering documents.

Knowledge discovery process ---->Artificial intelligence ----->Software engineering--->Software intelligence---->Smart software reuse-- -->Library smart software ---- - > Smart Automation

Figure 1. A method for obtaining software intelligence by searching for intelligence from software engineering literature. This project is the future of au tomating many tasks in software engineering using data mining and artificial intelligence.

III. Use software to recreate automated software development skills.

Software development involves all resources of the Software Development Life Cycle (SDLC), where a lot of information is processed at each stage. Si nce each SDLC level generates such large data sets, increasing software complexity can slow down data processing. Select useful information at each st age of the SDLC Ensure that the knowledge discovery process is effective in resource reuse. Software reuse simplifies application development and sav es time. Potential candidates for reusable materials in the development of applications should be carefully selected and used with quality products that a re free of contamination and adapted to current standards and changes in technology. To be efficient and effective, reusable products must be designed using solutions and solutions to various software engineering tasks. This knowledge should be used in the software reuse process described above to str eamline the software development process and select reusable components from software engineering projects that require coauthoring problems. It will also help maintain the quality of the software, make it work better, and make the transition to the technology easier, thus reducing the overall software development costs and time.

A. Apply AI to software development

Automated software development involves the integration of AI technology with software engineering and data analysis. While software engineering da ta mining helps extract accurate information to identify and select potential candidates for reuse, the integration of AI technology will help apply intelli gence in the above process. This will automate all areas of software engineering activities through software reuse. Software intelligence is known as bu siness intelligence in organizations because BI supports SI in business software. The holistic field of software intelligence can be explored to reuse tradi tional BI methods to implement BI infrastructure in large organizations [2]. By integrating expertise into all stages of software development, software d evelopment quality can be improved. The architecture, process, and organization of software reuse are crucial to the commercial success of software re use in software engineering [11] [12]. The integration of the three most important functions, namely software engineering, data mining, and artificial int elligence, will help improve software intelligence and ultimately automate the software development process. According to the specific product of the a bove process, the process can be reused. Intelligent software application, The study only supports the development of the entire software platform, and t he SDLC Software, which is strong at all levels, can only be used for the future software development of level 1 of the organization. The next section di scusses various techniques that play an important role in the field of software reuse in software development.

IV. Analysis of reusable AI technology

Artificial intelligence techniques such as machine learning, neural networks, fuzzy logic, machine learning, and data mining are being studied as ways t o improve various software development [9]. A study. The use of artificial intelligence in requirements engineering, software architecture design, softw are coding and testing, and programming process automation is discussed [10]. This section evaluates three cognitive skills related to software reuse in software engineering. Only the best practices in the overall system are discussed. There are many other technical skills that can help with software deve lopment. This article discusses three types of artificial intelligence, namely data mining, machine learning, and neural networks, and explains in separat e paragraphs to show in detail their impact on software engineering and software reuse as part of software engineering. The table lists all software engin eering studies and the most important technologies related to software reuse as a special area supporting software intelligence in organizations. Table 1 below lists various data mining techniques for software reuse in software engineering data mining. Mining techniques such as classification, clustering,

aggregation, regression, context and detail, dependency, change and variation, pattern search, and audit data auditing. The following paper [4] demonstr ates this. Mining algorithms such as association rule mining, active subgraph mining, partial sequence mining, graph matching, clustering, and classific ation are used in various software engineering tasks such as debugging, maintenance, error searching, etc. and business intelligence (SI) uses fact-based methods to improve business decisions by using support systems to support daily decisions [2]. The following table describes the mining techniq ues commonly used in the software engineering field to support software reuse in the software development process.

V. CONCLUSION:

This paper describes various techniques for software reuse used in software engineering. The combination of artificial intelligence and data mining sup ports software engineering practices, enabling software intelligence to support software reuse in software design and overall software development. The analysis of the various technologies discussed will help identify the research potential in the field of intelligence and software reuse in software engine ering.

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