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RESEARCH ARTICLE

Code Birthmarks and Graph Isomorphism for Theft Detection

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Abstract— JavaScript is becoming more and more popular as client-side scripting language in the web community. However, it is easy to copy the source code of JavaScript program with the help of additional functionalities provided by the browser. Hence, the intellectual property right of web application developers is at risk. To address this issue a new software theft detection technique, called as software birthmark; is introduced. Software birthmark results from the intrinsic characteristics of the program which could be used to determine the similarity between two programs. The proposed paper demonstrates the way to extract code signature and to design software birthmark along with the idea of using subgraph isomorphism to detect the source code theft of JavaScript programs.

Keywords— Software Birthmark; Heap Graph; Subgraph Isomorphism; Intellectual Property Rights (IPR); Theft Detection

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