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Sommario	<p>During the last years a novel technology, called blockchain, has gained more and more momentum, attracting the interest of big corporations and governments alike. Despite still being in its infancy, this technology has already provided a long lived usage example through the Bitcoin cryptocurrency and more novel application proposals keep getting presented. As the success of Bitcoin proved the feasibility of cryptocurrencies to provide a new trustless value exchange paradigm, the application of blockchain technology to other fields promises to revolutionize how we manage information in general, removing the need for trusted central authorities and intermediaries by giving control back to the users. In this dissertation we present our contribution to the field. Such contribution is twofold and can be separated in two conceptually distinct lines of work. First, we focused our attention on the Bitcoin cryptocurrency, and in particular on its users graph, where nodes represent users taking part in the system and edges correspond to transactions between them. We conducted a vast set of analysis on the data contained in the Bitcoin blockchain finding peculiar behaviours in the corresponding network and observing special sets of transactions. We gained useful insights on both the macroscopic state of the system and particular users use cases. Not only the gathered information is interesting by itself, but it is also useful in assessing the real users privacy provided by the Bitcoin protocol. The second</p>

main line of work presented in this dissertation concerns the novel applications of blockchain technology in fields other than cryptocurrencies. We present our own novel contribution of integrating blockchain with Access Control systems. We present different levels of possible integration, showing the gained advantages and drawbacks for each one, always relying on real proof of concept implementations of our proposals. This allows us to evaluate what true benefits the properties provided by blockchain technology can bring to traditionally centralised systems.

Localizzazioni e accesso

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