

Investigating the use of blockchain to authenticate data from the Statistics Canada website

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Abstract

This paper investigates the use of blockchain to enable users to authenticate data downloaded on the Statistics Canada website. Statistics Canada is the branch of government responsible for disseminating information to Canadians, and so it is important that we both maintain and increase trust with our service-users. In our literature review, we found that many were calling on government agencies to move towards using these technologies (Urban and Pineda, 2018; Ølnes, Ubacht, and Janssen, 2017; De Filippi, 2018). This project aims to develop a process of authentication that would allow users to verify that the material downloaded from the Statistics Canada website is tamper-free and produced by Statistics Canada. This project will increase the overall trust of Statistics Canada as a statistical organization. By incorporating blockchain into our solution, Statistics Canada can provide data provenance, track our data, reach the hashes if the website goes down, and increase the overall social trust with our users. Our research began with a literature review to define blockchain and identify how blockchain is currently being used in a Canadian context. We investigated how using blockchain could support record-keeping through archiving data, increase confidentiality and decrease vulnerability, generate trust between the user and Statistics Canada, and support users in authenticating data from the Statistics Canada website.