



Bachelorarbeit / Masterarbeit

Privacy in Blockchain-based Systems in the Energy Sector

Blockchain-based systems are transitioning from small prototypes to mainstream applications. The number of applications in the energy sector is growing rapidly. However, most data collected in the energy sector is highly sensitive. Hence, due to the underlying characteristics of blockchain technology (e.g. immutability), particular focus must be put on privacy preserving methods like for example zero-knowledge proofs. The aim of this thesis is to review existing literature on privacy-preserving methods embedded in blockchain-based systems in the energy sector. This includes the identification and consolidation of recurring patterns. The scope and research method varies depending on the type of thesis (i.e. Bachelor's or Master's thesis).

Recommended Literature:

- Andoni, M., Robu, V., Flynn, D., Abram, S., Geach, D., Jenkins, D., ... & Peacock, A. (2019). Blockchain technology in the energy sector: A systematic review of challenges and opportunities. *Renewable and Sustainable Energy Reviews*, 100, 143-174.
- Bergquist, J., Laszka, A., Sturm, M., & Dubey, A. (2017, December). On the design of communication and transaction anonymity in blockchain-based transactive microgrids. In *Proceedings of the 1st Workshop on Scalable and Resilient Infrastructures for Distributed Ledgers* (pp. 1-6).
- G. Zyskind, O. Nathan and A. ' . Pentland, "Decentralizing Privacy: Using Blockchain to Protect Personal Data," *2015 IEEE Security and Privacy Workshops*, San Jose, CA, 2015, pp. 180-184, doi: 10.1109/SPW.2015.27.

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