# Preface to the Proceedings of the First Blockchain enabled Semantic Web Workshop (BlockSW 2019)

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This volume contains the papers presented at the First Blockchain enabled Semantic Web Workshop (BlockSW) which was held in Auckland, New Zealand in October 27, 2019, in conjunction with the 18th. International Conference on Semantic Web (ISWC 2019). The workshop topics are at the intersection of three highly active research areas; Blockchain, Semantic web, and Artificial Intelligence. The workshop attracted semantic web researchers, graduate students, and industry practitioners from around the world, and the program committee (composed of experts from academia and research centers worldwide) accepted five submissions for presentation and publication in this proceedings.

The papers in these proceedings showcase several potential approaches and research challenges arising from combining Blockchain, Semantic Web, and Artificial Intelligence.

To protect the privacy and identity of data contributors, in **Private Digital Identity on Blockchain**, Hamer et al. propose a blockchain-based mechanism that enables service providers to validate that users have at most one biometrics-based identity, while protecting users from privacy breaches and from identity theft.

In **LinkChains: Trusted Personal Linked Data**, Third and Dominigue address data privacy by designing a framework to store personal data as Linked Data in a decentralized way, incorporating blockchains for data validation.

Przytarski, in **Using Triples as the Data Model for Blockchain Systems**, focuses on query support for blockchain data, describing how to use triples as the data model for current blockchains with the goal of enabling blockchain platforms to directly resolve complex queries, while preserving the tamper-resistance properties of the data queried.

**Towards Detecting Semantic Events on Blockchains**, by Bhattacharyya et al., proposes a solution for the interoperability problem of blockchain events. The authors identify problems regarding events emitted by smart contracts including lack of expressivity in parsing the event's definitions or lack of discovery and accessibility of the generated events from within the contract and outside of the contract.

Mohsin et al., in **Ontology Aided Smart Contract Execution for Unexpected Situations**, propose an ontology-based oracle that integrates with blockchain smart contracts and allows exceptional cases first to be semantically defined and second to be enforced accordingly. Their approach allows smart contract models to work with existing data systems.