

Letter from the Editor-in-Chief

The June issue of the Data Engineering Bulletin features a collection of papers curated by Prof. Tien Tuan Anh Dinh on the topic of Transparent Database Systems. It is the first issue of the Bulletin dedicated to addressing the rising of blockchain technology and its implication for data management.

A blockchain is an immutable digital ledger of transaction records. It is decentralized, distributed, and encrypted, making it a potential solution for a variety of data-driven applications with varying transparency and privacy requirements.

Several papers in this issue concentrated on leveraging the benefits of blockchains for data management. For example, Korth discussed how to best balance transparency and privacy so that blockchains can provide users with the level of trust that centralized data management systems cannot. Peng et al., on the other hand, focus on the potential benefits for data providers and consumers should we succeed in developing a system that allows privacy-preserving verifiable data sharing using blockchain technology.

While blockchain databases have the potential to offer a variety of benefits such as transparency, privacy, ownership, and trust, currently, they lack meaningful query and analytics support, making it difficult for them to support many real-life applications. A digital ledger, to some extent, is a complicated “OLTP” system optimized for decentralized immutability. Applications that require “OLAP” support may be forced to rely on systems that re-centralize the distributed data, negating all the benefits that blockchains can provide. We are looking forward to discussing these challenges in future Bulletin issues.

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