



# Secure Cross-domain Research Data Sharing and Management

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## Bio



Dr. Taeho Jung is an Associate Professor in the Department of Computer Science and Engineering at the University of Notre Dame, where he leads the Data Security and Privacy Lab (DSP-Lab). He earned his B.E. in Computer Software from Tsinghua University (2011) and his Ph.D. in Computer Science from Illinois Institute of Technology (2017). His research focuses on achieving security, trust, and privacy in cyberspace through applied cryptography and blockchain, collaborating with universities and industry partners to study cybersecurity from the algorithm to the hardware level. His zero-trust data sharing architecture supports Web3 systems including Web3DB, Web3Health, and Web3FS. Dr. Jung is an NSF CAREER Award recipient (2024) and has been funded by the National Science Foundation for research in privacy-preserving computation, decentralized systems, and secure data management.

## Abstract

Research data management is critical for advancing a domain. The sharing of research data is doable, but making it secure is hard, especially when cross-domain sharing is essential, because it is hard to let original owners have the final control once the data is shared beyond the trusted domain. Research data curation is doable at a small scale in a centralized manner, but it becomes challenging when we deal with large-scale data distributed across different owners, especially when accessibility is important. In this talk, the speaker will discuss several state-of-the-art research methodologies that aim to solve such problems. Then, he will share his zero-trust data sharing architecture, which currently supports a few Web3 systems and applications, including Web3DB, Web3Health, and Web3FS.