

---

# Big Data Privacy

**ONG Jenn-Bing**

PhD Student

School of Computer Science and Engineering, NTU

## ABSTRACT

We provide "keyless" data-security solution for privacy-preserving big data storage and communication using only metadata privacy. Our solution decomposes big data into fragments which are not recognizable and not interpretable, the shredded data fragments can be used directly for privacy-preserving computation and sharing between multiple content providers on mobile-cloud environments. The data fragments are not unique for particular record, they are unlinkable and not interpretable making them suitable to protect big data privacy. Unlike classical Secure Multiparty Techniques which require data preprocessing and rely on sophisticated security protocols with high computational or communication complexity, our solution naturally supports compressed and distributed operations with comparable computational efficiency on plaintext processing. As a mathematical technique, our solution can be combined with existing privacy-preserving technologies and can be easily integrated with existing computing platforms, processes, and environments. We provide a small-scale demonstration of the proposed technology using Raspberry Pi to show the feasibility of our approach.

## BIOGRAPHY

Ong Jenn Bing obtained his Bachelor of Science in Physics with a minor in Mathematics (1st Honours) from Nanyang Technological University. He is currently a 4th-year PhD student at NTU School of Computer Science and Engineering.