Special Issue

Symmetries and Symmetry-Breaking in Data Security, 2nd Edition

Message from the Guest Editors

Data security is fundamental to protecting the integrity and reliability of information in our increasingly digital world, ensuring trust and safety for individuals, businesses, and governments alike. Symmetries and symmetry-breaking play significant roles in data security, and their study provides valuable insights and tools for developing more secure and resilient data protection methods. Recently, many researchers have concentrated on watermarking techniques for data protection, encryption methods to ensure data integrity and confidentiality, secure data transactions, and privacy-preserving computation strategies to enhance data security. Additionally, there is a focus on the dynamic interplay between attacks and defensive measures in data security, emphasizing innovative approaches to mitigate threats. Understanding the concepts of symmetries and symmetry-breaking allows security professionals to anticipate potential vulnerabilities and design methods that are robust against a wide range of threats.

This Special Issue seeks to address both theoretical and practical aspects of how symmetry principles can enhance or compromise security mechanisms across various domains.

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

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