Special Issue

Symmetry in Cybersecurity–Generative AI Security and Threat Resiliency

Message from the Guest Editors

The goal of symmetry in cybersecurity is to create a consistent and well-structured defense strategy that helps to mitigate security risks and vulnerabilities. Generative Artificial Intelligence (AI) has brought a paradigm shift in various fields and possesses the learning capabilities of synthesizing new content, finding patterns, deriving insights and making predictions much faster than humans. However, with its numerous benefits, there are also significant security implications associated with generative AI that could have a significant impact on its field of application. This Special Issue will attempt to cover the tradeoff between positive and negative security impacts of generative AI and different threat mitigation approaches. This will also include symmetry-based approaches to maintaining a balanced defense strategy, such as distributed resources, redundancy, network segmentation, fairness and bias mitigation, and control access. We invite researchers to contribute their original and high-quality research papers on advances in generative AI security and threat resiliency.

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About the Journal

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.

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