

## Special Issue

# Explainable AI: Methods, Applications, and Challenges

### Message from the Guest Editor

The growing application of the usage of artificial intelligence (AI) techniques for different applications in various sectors (including network security, autonomous driving, IoT systems, medical domain, and among others) opens new research directions in this research area. However, most existing research has primarily concentrated on the classification accuracy of different AI algorithms without offering insights into their underlying behaviour and decision-making processes. This constraint highlights the urgent need to better utilize the relatively new domain of explainable AI (XAI) to enhance the clarity of AI decisions in these different domains. XAI is essential for building trust, transparency, and accountability in AI systems, particularly in applications where decisions have high-stakes implications. There are several challenges for such usage of XAI, including generating accurate global and local explanations of AI models, discovering the main features that affect the decision-making of each AI model, and evaluating different classes of XAI models to test for trust in their applicability.

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### Message from the Editor-in-Chief

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