

Studies in Computational Intelligence 1072

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# Explainable Edge AI: A Futuristic Computing Perspective

# **Studies in Computational Intelligence**

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# Explainable Edge AI: A Futuristic Computing Perspective

 Springer

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# Chapter 6

## Explainable Artificial Intelligence in Health Care: How XAI Improves User Trust in High-Risk Decisions



Sheeba Praveen and Kapil Joshi

**Abstract** Explainable AI (XAI) is a set of methodologies, design concepts, and procedures that assist developers and organizations in adding a layer of transparency to AI algorithms so that their predictions can be justified. AI models, their predicted impact, and any biases may all be described using XAI. Human specialists can grasp the forecasts generated by this technology and have trust in the results. Medical AI applications must be transparent in order for doctors to trust them. Explainable artificial intelligence (XAI) research has lately gotten a lot of attention. XAI is critical for medical AI solutions to be accepted and adopted into practice. Health care workers utilize AI to speed up and enhance a variety of functions, including decision-making, forecasting, risk management, and even diagnosis, by analyzing medical pictures for abnormalities and patterns that are undetected to the naked eye. Many health care practitioners already use AI, but it is frequently difficult to understand, causing irritation among clinicians and patients, especially when making high-stakes decisions. That's why the health-care business requires explainable AI (XAI). Significant AI recommendations, such as surgical treatments or hospitalizations, require explanation from providers and patients. XAI delivers interpretable explanations in natural language or other simple-to-understand formats, allowing physicians, patients, and other stakeholders to better comprehend the logic behind a suggestion—and, if required, to dispute its validity.

**Keywords** Artificial intelligence • Machine learning • Deep learning • Explainable artificial intelligence (XAI) • Diagnosis • Black box algorithm • Neural network • Medical and industrial applications

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