Integrating statistical rigor and domain expertise with Responsible AI

Abstract

With the proliferation of advanced modeling techniques using Machine Learning and AI over the past decade, global government agencies and regulators have started to emphasize Responsible AI principles. Equifax has established guiding principles for AI/ML, which are mapped to eight fundamental areas: MAJESTIC™ - Monitored, Accountable, Just, Explainable, Secure, Transparent, Inclusive, and Component. A key component of the framework is to ensure that statistical rigor and domain expertise are applied throughout the entire model development lifecycle.

In this talk, we give an overview of the MAJESTIC principles and how Equifax continues to embed statistical rigor and responsible AI into Machine Learning through our industry leading Explainable AI patents and modeling approaches. Equifax developed NeuroDecision Technology (NDT) as the first patented monotonic neural algorithm filed in March 2015 with products using NDT since 2018 (presented at CSCC 2019). For decision trees, Equifax developed the patented solution for monotonic GBM's and Random Forest ("Tributary") in October 2017. Recently, Equifax developed explainable Bayesian models in December 2022.

Some of our recent research has focused on enhancing the challenge of explainability in Neural Networks via our Responsible AI lab at Kennesaw State University. The lab's research has produced patents that go beyond global significance (e.g. SHAP values) and address local significance of features and confidence intervals.

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