

Talk

Visualization for Trust in Machine Learning Revisited

Abstract:

Visualization for explainable and trustworthy machine learning remains one of the most important and heavily researched fields within information visualization and visual analytics with various application domains, such as medicine, finance, and bioinformatics. After our 2020 state-of-the-art report comprising 200 techniques, we have persistently collected peer-reviewed articles describing visualization techniques, categorized them based on the previously established categorization schema consisting of 119 categories, and provided the resulting collection of 542 techniques in an online survey browser. In my talk, I will present the updated findings of new analyses of this dataset as of fall 2023 and discuss trends, insights, and open challenges for using visualizations in machine learning (ML). I will also show our interactive visual survey on enhancing trust in ML models with visualization, called TrustMLVis Browser, which is freely available online (trustmlvis.lnu.se). Our results corroborate the rapidly growing trend of visualization techniques for increasing trust in ML models in the past years, with visualization found to help improve popular model explainability methods and check new deep learning architectures, for instance.