The Next Step in Machine Learning's Evolution: Graph Neural Networks

Dr. Aasman recently publish this article on Graph Neural Networks at Toward Data Science.

The capacity to consistently attain enterprise value from mission critical machine learning deployments hinges on at least one of the following three applications: classifying entities, predicting events, and understanding why events happened.

No matter which technique is used, whether it includes supervised, unsupervised, or reinforcement learning, or if the scale and compute of deep learning is involved, conventional machine learning has limitations for solving these business problems.

It works well for many types of data, but incurs difficulty and outright failure when applied to high dimensionality networked datasets. These limits demand a new approach for social network research, recommendation engines, biology, chemistry, computer vision, and Natural Language Processing deployments in which context is pivotal.

Graph Neural Networks excel at predicting events, explaining them, and classifying entities at scale to deliver striking accuracy for these and other pragmatic deployments. Pairing their reasoning with semantic inferences creates additional knowledge for predicting events based on the multifaceted, contextualized relationships in high dimensionality data.

Read the full Article.