

RegTech: U.S. Regulator's View on Artificial Intelligence in Risk Assessment

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On 21 June at the OpRisk North America 2017 conference in New York, Scott W. Bauguess, Acting Director and Acting Chief Economist of the U.S. Securities and Exchange Commission's ("SEC") Division of Economic and Risk Analysis ("DERA") gave a keynote speech on the use of artificial intelligence by regulators. A transcript of the speech can be found [here](#). Bauguess provided some interesting background on the utility and use of big data and machine learning at the SEC to identify potential misconduct by market participants and investment managers, and the emerging use of artificial intelligence.

Bauguess' speech discussed the SEC's use of AI in its regulatory framework, initially discussing machine learning. The SEC currently applies topic modeling methods, such as Latent Dirichlet Allocation ("LDA"). LDA reviews text-based documents (e.g., registration disclosures) and reports on where, and to what extent, particular words appear in each document. This occurs either by: analyzing the probability of words across documents, and within documents, to define the topics they represent ("unsupervised learning"); or incorporating human judgement and direction into the programming of the machine's algorithms ("supervised learning").

For investment managers, the SEC uses a two-stage approach to detect potential investment adviser misconduct. In the first stage, the SEC uses "unsupervised" learning algorithms to identify unique behaviors. Then it feeds the outputs of the first stage into a machine learning algorithm to predict the presence of risk for each investment manager. Although this method has proven successful, it can produce false positives, and therefore SEC human staff still must review the outputs of these models.

Of particular note is need for ongoing human assessment of potential enforcement actions due to the inherent limitations of current technology. However, it is obvious that machine learning algorithms and AI will be a critical tool for enforcement and regulation in the future. However, Bauguess does think it reasonable that AI could develop to: aggregate data, assess whether securities laws have been violated, and generate detailed reports on market risk and potential enforcement actions.

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