Uses of Machine Learning Today

# Discussion

Machine learning is used extensively in financial institutions. A research group in the MIT Sloan School of Management has found that using machine learning techniques could mitigate between 6% and 25% of losses from delinquent bank customers.

The researchers (Amir E. Khandani, Adlar J. Kim, Andrew W. Lo) used data from an undisclosed bank collected from January 2005 to April 2008. According to the paper’s introduction,

“We use an approach known as ‘‘machine learning” in the computer science literature, which refers to a set of algorithms specifically designed to tackle computationally intensive pattern recognition problems in extremely large datasets. These techniques include radial basis functions, tree-based classifiers, and support-vector machines, and are ideally suited for consumer credit-risk analytics because of the large sample sizes and the complexity of the possible relationships among consumer transactions and characteristics.”

The system used several variables to generate a score for various customers, and then measured the predictive power of each scoring heuristic. Eventually a valuable heuristic was generated for determining customers with poor credit credentials, resulting in a prescriptive portrait of potential borrowers.

The paper further notes that researchers Berrak Büyükkarabacak and Neven T. Valev found that “private credit expansions are an early indicator of potential banking crises,” in 2010. Consequently, predictive measures to limit bad extensions of credit could be significant to preventing future financial meltdowns.

# References

**(Amir E. Khandani, Adlar J. Kim, Andrew W. Lo) Journal of Banking & Finance, June 2010**

<http://bigdata.csail.mit.edu/sites/bigdata/files/sites/Lo%20JBF%20Pub%20abstract%20and%20paper.pdf>

**Berrak Büyükkarabacak and Neven T. Valev (Journal of Banking & Finance, June 2010)**

<https://www.sciencedirect.com/science/article/pii/S0378426609003197>