Rapid change in the world of finance has led to great innovation in the types of investments an individual can make. This change provokes innovation in the way we maximize our return on such investments.

I chose to focus on “peer to peer” loans and, more specifically, how one might utilize the growing field of machine learning to gain insights other investors lack. I utilized my own analysis as well as the work of others.

Peer to Peer Loans?
Traditionally, when applying for a loan, the bank that approves the loan is the same institution that funds the entire balance. However, in a peer to peer system, lenders are other individuals who gather at a central (web) site and decide who they would like to fund. The advantage is a higher return for investors and a lower rate for borrowers.

Machine Learning?
A branch of artificial intelligence in which algorithms learn patterns in data. For instance, given a set of properties about loans that have already matured, use those properties to classify a non-mature loan as likely to default or not.

Introduction

Methods and Insights

Performance Improvement due to Genetic Algorithm (Emphasis Mine)

Diminishment in Excess Return as Portfolio Size Increases

References / Credit

Both the Naive Bayes and Support Vector Machine models were done in the statistical software R, using the package e1071. Further analysis of their output was accomplished in Excel.

Credit for the Genetic Algorithm model and accompanying graphs goes to David Patierno at www.dmpatierno.com

Credit for the insights involving quality of loan populations as well as an excellent example of a SVM go to Nikhil Bhatla at http://nikhil.superfacts.org

Credit for the peer to peer lending vector art goes to users qhlogodesignguru, mindsunfold, and Josephtury on www.vecteezy.com.