1145-91-2244 **Xuan Xu** (xu-x16@mails.tsinghua.edu.cn), Room 112B, Zijing 12 Building, Tsinghua University, Haidian District, Beijing, 100084, and **Yifan Wu*** (201511130106@mail.bnu.edu.cn). *Credit Risk Valuation Based on Machine Learning.*

An ideal credit risk evaluation model will accurately reflect the actual financial status of enterprises, which can offer a reasonable reference for financial firms in decision-making. Traditional credit grading systems are usually using linear combinations of several indexes or Black-Scholes formula based on stochastic process, weighted by empirical constants, such as Z and Zeta Models or KMV model; there was no good explanation about why those indexes, distribution and constants were made. In this research, by nonparametric machine learning methods, we provide evaluation algorithms, which iterate successively until reach a stable state, thus explain their rationality. First, we do not assume any index to be superior, while using logistic regression, hybrid genetic algorithm, recurrent neural networks and support vector regression, we may find the best indexes and weights to provide a reliable approximation of the single index of current ratio, which has its own inevitable inaccuracy and is easy to make fraud; then use normal distribution function to convert the result into probability scale. We believe that our model will outperform current models. (Received September 25, 2018)