Modeling Patent Legal Value by Extension Neural Network

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Abstract

This study aimed at the basis of patent law and proposed a revolutionary valuation model for the monetary legal value of patents. The damage award of a patent infringement lawsuit was deemed to be the legal value of a patent. 65 Effective samples were extracted from 4,289 patent infringement lawsuits retrieved in U.S. district courts of Delaware, California and Texas. 17 quantitative patent indicators for describing dimensions of patents were summarized. The Extension Neural Network incorporated with the Factor Analysis was applied to construct the valuation model of patent indicators and damage awards. The proposed valuation model was validated to have the predictive power by error analysis and was accommodated to valuate the possible damage award or to negotiate the settlement fee in disputing patent infringement suits. It also contributed to patent transaction deal, patent licensing, hypothecation of intangible assets, and shareholding by patent-based technologies, etc.

Keyword：Patent Valuation; Factor Analysis; Extension Neural Network; Damage Award; Infringement; Lawsuit