

A Two-Layer Scheme for Membership and Classification Querying

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Abstract

Purpose - The purpose of this paper is to effectively deal with querying of classification with membership.

Design/methodology/approach - The authors propose a scheme comprising a layer of Bloom filter for membership checking and a second layer based on neural network for dealing with the classification requirement.

Findings - Not only could false positives be dramatically decreased, but also classification could be achieved with the proposed scheme.

Research limitations/implications - The experimental data were randomly generated instead of real-world ones.

Practical implications - It is difficult to implement this scheme in a real-world environment, such as the internet. Second, the neural network requires time to converge to a satisfactory level.

Social implications - Internet ethic might be compromised by hackers once they find a way around the filtering mechanism.

Originality/value - The neural network was modified and utilized for the first time to be suitable for our purpose. Second, the two-layer design shows effectiveness.

Keyword : Information systems, Neural nets, Classification, Architecture