APPLICABLE METHODS OF ARTIFICIAL INTELLECT FOR SOFTWARE INVENTORY

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Each year the number of new software products drastically increases due to the rapid development of the computer technology. It should be taken for consideration that a large number of software applications can be installed on a personal computer. In turn it presents a problem of tracking all these software application on each PC stand alone as well as over the network. That is where the question arises: how can we monitor this chaos? One of the solutions can be found in the development of software inventory system, which will allow us to identify the installed software on each PC, collect the data, analyze it and break it down to different categories. One of the main tasks of the software inventory system will be the classification of the software application.

During the process of classification of software the default object will be considered a piece of software, which is going to be identified and referred to a certain category. Each category must meet the criteria's set by an expert engineer. For example, one of the criteria is a driver that acts like a translator between the device and programs that use the device. Each device has its own set of specialized commands that only its driver knows. Another criteria is a programming library, a collection of precompiled routines that a program can use. The routines, sometimes called modules, are stored in object format.

Let us classify the specific class set $\tilde{N} = \{\tilde{n}_k \mid k = 1..m\}$. The arbitrary infinite set of programming objects $P = \{p_i \mid i = 1..oo\}$ will be classified. Each object has its own set of attributes. In order for the object to be identified to a certain category it must have the attributes specific for that category. The elements of single specific class set $A = \{a_j \mid j = 1..n\}$ are the objects, which contains the individual or general attributes, and the necessary attributes for classification. Let's enter function of calculation of probability of possession of object p_i by attribute a_j and we shall designate it $r_{aj}(p_i)$. Area of values of the given function is the interval from 0 up to 1. The more conformity of object $p \in P$ to an attribute $a \in A$, the value $r_a(p)$ is closer to 1, and accordingly the it is less conformity, the value $r_a(p)$ is closer to 0. Then for what to determine probability of a belonging of object p_j to class $\tilde{n}_k$ it is necessary to calculate the sum of products consisting of weight factor and function $r_a(p)$: $\tilde{n}_k = \Sigma^{q}_{i=0} (k_i * r_{ai}(p_j))$, where k_i is a weight factors at the appropriate functions, the necessary influences for scaling a certain attribute, r_{ai} is a function which describing conformity of object p_j to attribute a_i. The class to which most likely concerns object p_j is $\tilde{n} = \max^{f}_{k=0}\{\tilde{n}_k\}$, where f is a number of elements in set C. The given model of classification, aim on an idea of application of methods of an artificial intellect. In particular applications of expert estimations for check of conformity of object $p \in P$ to attribute $a \in A$. The neural network for updating weight factors, and as for decision making a belonging of object $p \in P$ to a class $\tilde{n} \in \tilde{N}$.