Application of Artificial Immune System in Wiki-based Information System Recommendation

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Different types of recommender systems are nowadays gaining popularity among internet systems providers owing to their ability to deliver customized information for their users [7]. They are applied in many areas like e-commerce, web content, web advertising and also user interfaces [3,7,9,10].

However we can distinguish three basic recommendation approaches: demographic, content-based and collaborative [7], they are using many different general reasoning methods know from many other disciplines such as Artificial Intelligence, Expert Systems or Information Retrieval. Recently, the recommender systems also adopt some nature inspired methods such as artificial immune system [4,7]. In the Biology, the immune system is defined as "the system of specialized cells and organs that protect an organism from outside biological influences" [12]. In the literature we can find some application of AIS for collaborative filtering [1]. We are going to develop, implement and verify hybrid recommendation method for layout, structure and content recommendation in the existing wiki-based system (for example Wikitravel or Wikinews) [12]. Besides AIS we are going to implement some consensus-based methods for content-based recommendation [8,9,10] and fuzzy inference rules for demographic filtering [7].

Wiki-based information systems are gaining its popularity among many different users so it is becoming necessary to apply recommendation for information entry, verification and retrieval by personalizing and adapting all the elements: layout, structure and content [4].

In general we aim to combine works of at the following target groups: AI specialist working on nature inspired IS, agent systems and interface agents [5], recommender systems and IT and CMS tools developers . We hope that this cross-disciplinary approach enable to construct novel type of recommender system and help IT specialist to understand better nature inspired as well as recommendation methods.

Artificial Immune Systems [11] is a developing area and its application in collaborative filtering approach in the implementation of recommender system help to verify this method and create novel technologies for that kind of systems. The research will gather the knowledge about different applications of AIS in recommender systems as well as enable to develop user interface and content recommendation for wiki-based systems. We are going to apply complex usability verification environments to test the implemented wiki-based recommendation system. The usability tests will be conducted with some users that represent

different groups of users using both traditional usability methods and gaze-tracking devices and Eye-anal computer application.

KEYWORDS: Artificial Immune System (AIS), Recommender Systems, Wiki, Usability

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