Study on the Construction and Application of Knowledge Map in Tourism Field

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Abstract: as an Important Foundation of the Era of Big Data, Knowledge Map is Widely Used in the New Generation of Search Engines and Intelligent q &Amp; a Systems and Other Intelligent Applications. Knowledge Map Defines Knowledge Accumulation in a Standardized Way, Which Provides a More Convenient and Effective Basis for Knowledge Inference and Decision-Making. Knowledge Map is Used More and More in Specific Fields. for Example, in the Field of Tourism, the Construction and Application of Tourism Knowledge Map Has Appeared, But the Direct Information of Tourists Has Not Been Mentioned. Based on the Existing Products of Tourism Knowledge Map, Fujian is Taken as the Main Help of Knowledge Map Recommendation.

1. Introduction

The Existing Knowledge Map of Tourist Attractions is More Used to Help Businesses Recommend Tourists[1]. Different from the Existing Knowledge Map of the Tourist Destination, the Knowledge Map Composed of This Article Covers the Information of the Tourist and the Tourist Attractions That the Tourists Really Care about, Including the Knowledge of Sightseeing, Life and Tourism. You Can Give It Directly to Tourists.

The Main Topics of the Knowledge Chart in This Chapter Are as Follows.

Table 1 Classification of Clustering

Clustering	Type (for algorithm)
Hierarchical clustering algorithm	(Birch, Rock, Cure, Optigrid)
Segmentation clustering algorithm	Density based clustering
	Grid based clustering
	Clustering based on graph theory
	Iterative redistribution clustering based on square error
Constraint based clustering algorithm	(COD)
Clustering algorithm in machine learning	Artificial neural network method
	Methods based on evolutionary theory (simulated annealing, genetic algorithm)
Clustering algorithm for high dimensional data	Subspace clustering
	Joint clustering

By analyzing the needs of tourists and information from various sources on the Internet, this paper proposes a domain ontology construction method which combines two top-down and bottom-up ontology construction methods[2]. It is necessary to consider not only the domain knowledge structure, but also the requirements of practical application scenarios and the actual situation of data.

Considering the characteristics of tourism domain entities, a pair of entity alignment method for tourism domain entities based on this model is proposed. Through experimental comparison, this method improves the performance of security alert task in tourism field [3].

2. The Construction of Tourism Domain Ontology

To construct knowledge map in tourism field, we need to construct ontology first. Even in the same domain, different directions of building ontology will lead to very different ontology models. In the research of the construction of the ontology of scenic spots, in the process of construction, the

destination orientation is constructed according to the 7-step method which does not consider the application scenarios[4]; the research of the ontology construction of tourism field is based on the trout 7-step method, which is classified accurately, to construct the tourism model for use, but considering the actual data and application conditions, the angle of information and knowledge management is constructed. In addition, tags are defined as fines for excessive automatic instantiation.

3. The Construction Method of Tourism Domain Ontology

Building domain ontology is a complex work. There are three general methods. Semi automatic configuration, automatic configuration and manual configuration. Generally, the manual building method of building ontology is usually manual building ontology by most domain experts. The ontology of artificial construction is usually of high quality, and the method of artificial construction often consumes a lot of human resources. The automatic construction of ontology technology is also called ontology learning technology. Ontology learning technology is to use a variety of knowledge acquisition technology or machine learning technology to automatically extract concepts and relationships from a given corpus or data source, thus forming an ontology. Building ontology automatically usually produces a lot of noise data. The concept relationship extracted is loose, and it is difficult to ensure the reliability. The composition of knowledge chart in this paper is a practical problem in the travel scene[5]. In order to solve the problem of direct participation, it is necessary to build an ontology based on ontology learning technology, which is difficult to adapt to this requirement. Therefore, this paper adopts the construction of ontology to consider all factors of the artificial ontology construction method, in order to complete the investigation.

Table 2 Keywords Extracted By Textrank

Entity to be disambiguated	Candidate entity 1	Candidate entity 2	Candidate entity 3
Shangri-La	Shangri-La	Hotel	The Zang or Tibetan people
At heart	Yunnan Province	Shangri-La	Shangri-La
Set out	Nation	Asia	Nation
Seek	Scenic spot	Group	Tashi
Position	Travel	Hotel	Legend
Daocheng	Shangri La County	Commerce	Grow up

4. Introduction of Traditional Ontology Modeling Methods

General ontology modeling methods include 7-step method, skeleton method, cycle acquisition method, tdknisb method and live enterprise modeling method. This step was developed by Stanford University School of medicine. The specific steps are to determine the professional domain and ontology category; please check the possibility of reusing the existing ontology and list the important terms in the ontology; please define the class and class level; attribute; please define the attribute aspect; please create an instance[6]. Circular acquisition is a circular process composed of resource selection, concept learning, domain concentration, relationship learning and evaluation. These ontology modeling methods are mature general methods in other fields. When it is directly applied to the field of tourism, especially the tourism knowledge map constructed in this paper, it has strong practical requirements, some shortcomings and deficiencies. He listed the problems of the 7-step method and the circle obtaining method in the construction of tourism ontology.

5. Improved Domain Ontology Construction Method

On the basis of the problems mentioned in this draft, combined with the circular acquisition method and 7-step method in the field of medical treatment, the paper reorganizes the tourism field and puts forward the practical construction method for the tourism field ontology. See the specific process. This paper proposes an improved method to construct domain ontology. First, the entity

scope is determined for the tourism circle, then the ontology and terminology are abstracted according to the actual application scenario (Intelligent Question and answer direction), and the direction related information in the field is taken as the object. Collection, this method not only considers top-down design from abstract knowledge, but also considers two "bottom lines" from practical application scenarios and domain data, enriching and modifying ontology design[7]. Properly cover all kinds of requirements, then evaluate definition, simplification, optimization, reuse and ontology, so that the final design of ontology will not be too complex.

5.1 Determine the Professional Field and Category of Ontology, and Initially Abstract the Ontology

The data and knowledge contained in the whole domain ontology are too extensive, and the construction of domain ontology is too difficult to realize. Therefore, before establishing ontology, we need to determine the domain and category of ontology[8]. Even if the same domain is emphasized differently, the differences of the constructed ontology will become larger.

5.2 According to the Practical Problems to Be Solved, the Ontology and Terms Are Abstracted

The traditional ontology construction method does not consider the final application scheme and practical problems that need to be solved in the construction stage. It is often difficult to focus directly from abstract domain knowledge and terminology to the final application scenario. Therefore, ontology should be refined and abstracted from the practical problems of application script and ontology construction stage.

5.3 Collection of Site Information

In order to fully understand the knowledge in this field, it is necessary to collect information and information in this field. Information in the field of tourism comes not only from major tourism websites, but also from encyclopedia information of various tourist attractions and local government tourism websites[9]. At the same time, tourism notes, questions and answers of tourism communities and other text data contain rich meaningful information.

5.4 Define the Concept of Ontology and Establish the Classification Relationship between Concepts

After collecting the data, you need to list as many concepts and terms as possible in the fields. The concepts and terms listed can help people better understand the establishment and goal of ontology. In addition, it is convenient to choose a more suitable description language for ontology description. The concepts defined in this step must be as rich as possible to fully cover all possible travel scenarios.

6. The Construction and Realization of Tourism Domain Ontology

According to the construction method of tourism ontology proposed in this paper, it is necessary to collect domain information before ontology design. The collection of domain information can be divided into abstract knowledge level, top-down concept enumeration, data level, bottom-up concept extraction, and practical problem extraction at the actual scene level. Determine the domain and category of ontology, abstract ontology. This paper studies the construction of tourism destination ontology. From the perspective of global knowledge, amusement facilities can be generally divided into two categories: natural landscape and human landscape. In this paper, the scenic spots are divided into three categories: natural landscape, human landscape and artificial landscape.

Taking some tourism subjects in Fujian Province as an example, more meaningful relationships can be obtained through knowledge inference, and the results can be visualized. Some of the non famous rides, restaurants, hotels may be difficult to observe because they often have detailed information about their relationship. Therefore, the relationship between popular attractions and non

popular amusement facilities mainly exists in the introduction of non famous amusement facilities. By using the general knowledge inference rules for inference, information can be found better and knowledge base can be further enriched. The main body identified in the first two stages is the center. Baidu Encyclopedia and major tourism websites such as Ctrip and wasp's nest. This is the 228 hotels 3173 and 1167 cuisine restaurants in 65 restaurants in 45 popular tourist cities in Fujian.

7. Conclusion

It mainly describes the method of building ontology and data collection, and builds a tourism knowledge map covering food, accommodation facilities, tourists and other information that tourists need to pay attention to. Different from the existing knowledge map of tourist destination, the tourism knowledge map constructed in this chapter focuses on the information that attracts the actual attention of tourists and the needs of tourists. Based on the characteristics of tourism field, the ontology construction method of tourism field is not only constructed from the top-down knowledge outlook. However, according to the actual application scenarios of knowledge map and the actual situation of data, we will focus on the bottom-up ontology correction. Aiming at the data characteristics of tourism entities, this chapter improves the paired entity alert model based on maltm, solves the problem of unable to use numerical characteristics, explores the functional engineering of tourism entities, and verifies the effectiveness of the experiment. Finally, the inference function of knowledge chart is used to further improve the content of knowledge chart.

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