

# **A Multi-Agent Based Solution for Dynamic Tour Recommendation**

M.K.M Kalpanie

129104M



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MSc in Artificial Intelligence

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## Declaration

I declare that this dissertation does not incorporate, without acknowledgment, any material previously submitted for a Degree or a Diploma in any University and to the best of my knowledge and belief, it does not contain any material previously published or written by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and summary to be made available to outside organization.

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M.K Mahesha Kalpanie

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Supervised by

Name of Supervisor

Prof. Asoka Karunananda

Signature of Supervisor(s)

Date:

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## Abstract

Tour recommendation and planning has become a complex and challenging task in the modern world. Even though there is wide-variety of existing sources that provide tour recommendations for tourists based on their preferences, it has become a difficult task for tourists to pick up the right and up to date touristic information from those sources. The solutions provided by the existing application and travel companies are not sufficient for a tourist to plan their holidays in a satisfactory and efficient manner. Even when the existing touristic information sources are up to-date, there is no proper way to recommend best touristic activities based on specific preferences of a tourist using those up to date information. This thesis discuss about the software that has been developed to tackle the problem of handling the complexity of tour recommendation in dynamic manner based on up to date information. The main purpose of this application is to help tourists by providing them with up-to date information about touristic information and help them to choose the right destination and tour activities. In this application tour recommendation will be created based on users' dynamic changes on preferences and the dynamic changes of the other factors such as changes of the schedules of events or tour activities, bad weather condition, heavy traffic etc.

With the approval of an administrator, any user who registered in this system can input information about new tour locations or touristic activities to the systems or update changes of existing information to the system. A tourist can access the systems using their hand held devices and specify their preferences as the inputs. The preferences of the tourist mainly include arrival date, departure date and the interests of the tourist. A tourist can have one or more interests such as wildlife, scenery, hiking, cultural discovery, beach & water related activities, meditation, romantic getaway, shopping and etc. based on up-to date information and tour preference the system will recommend using multi-agent technology, a customized set of touristic activities to the tourist in adaptable and efficient manner. According to the evaluation performed using real data captured via questionnaire, the best results were obtained and it is concluded that a tourist can easily calculate their own tour activities in dynamic manner.

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