# ARTIFICIAL INTELLIGENCE

## Proposed System: Kathmandu tourist assistant AI system

### Abstract

Artificial intelligence concepts and techniques are popular in many real world applications such as navigation systems and recommendation systems. The Proposed system integrates both recommendation system and navigation system to assist tourists explore the city of Kathmandu independently without any help from other sources.

### Problem Statement

Any tourist in a foreign land finds it to be a hassle to properly plan their trip and activities. Often their hard earned trips turn out to be unsatisfactory due to lack of proper information. The proposed AI system is aimed at assisting tourists to plan activities best suited for them and provide proper navigation in a centralized application such that the user can be independent and avoid wasting expenses on guides and travel books.

### Solution

The proposed system consists of two sub systems – 1. A recommendation system 2. A navigation system.

#### Recommendation system

The recommendation system is implemented with the content based filtering approach. In this approach the system uses the users past preferences and identifies its attributes to find new solutions with common attributes. The application extracts the likes of the user from their Facebook profile and identifies the prevalent attributes and finds activities or sites in Kathmandu sharing the same attributes and recommends the user. For example if the user likes many reggae bands in her Facebook account, the system recommends the user a pub with live reggae music. If the user likes hiking as an interest, the system recommends hiking destinations in Kathmandu. The Tf-Idf item presentation algorithm will be used in the system.

#### Navigation system

After the user selects an activity from the recommendation system, the navigation system provides navigation to the every option. The user decides the destination and then the system provides the shortest routes to the destination. The navigation system is based on finding the shortest path and uses Google maps and Bellman- Ford algorithm.

### Production rules

The production rules of the system are –

1. The users Facebook likes are retrieved and the attributes are recorded.
2. Content based filtering is used to find activities in Kathmandu with similar attributes.
3. The user selects an activity from the recommendations
4. The system provides destinations pertaining to the activity and provides the shortest path and navigation to the destination chosen by the user.

### Conclusion

Hence the proposed AI system provides a convenient resource for a tourist arriving in Kathmandu to plan a trip according to their tastes and carry out the trip independently.