

Implementation of Multi Skill Spatial Crowd Sourcing Processing Approaches

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Abstract- Data mining is the computing process of discovering pattern in large data sets. The overall goal of the data mining process is to extract information from a data set and transform it into an understandable structure for future use. With the rapid development of mobile devices and crowdsourcing platforms, the spatial crowdsourcing has attracted much attention from the database community. Specifically, the spatial crowdsourcing refers to sending location-based requests to workers, based on their current positions. The system consider a spatial crowdsourcing scenario, in which each worker has a set of qualified skills, whereas each spatial task such as repairing a house, decorating a room, and performing entertainment shows for a ceremony is time-constrained, under the budget constraint, and required a set of skills. For developing such system different methods and techniques are used such as greedy, g divide- and-conquer and cost-model-based adaptive algorithms to get worker-and-task assignments, the work should be done within time and under budget. The system introduce a task assignment on multi-skill oriented spatial crowdsourcing to demonstrate the efficiency and effectiveness of our MS-SC processing approaches on both real and synthetic data sets.

Keywords- Multi-skill spatial crowdsourcing, Greedy algorithm, g-Divide and Conquer algorithm, Cost-Model-based adaptive algorithm.

I. INTRODUCTION

Data mining is computing process of discovering pattern in large data set. With the popularity of GPS-equipped smart and device and wireless mobile network people can easily identified and handle. Crowd-sourcing platform assign a number of moving workers to do spatial task nearby which required worker to move some one specified location , under budget constraint set required set of skills. For developing such a system different method and techniques are used such as greedy , gdivide- and-conquer and cost-model-best adaptive algorithm to get workers and task , the work should be done within time and under budget.

The system introduce a task assignment on multi-skill oriented spatial crowd-sourcing to demonstrate the efficiency and effective ell also our MS-SC process approaches on both real and synthetic data set.

II. DATA MINING

Data mining is the computing process of discovering patterns in large dataset involving methods at the intersection of machine learning , statistics and database system. It is an essential process where intelligent methods are applied to extract data patterns. It is an interdisciplinary subfield of computer science. The overall goal of a data mining process is to extract information from dataset and transform it into an understandable structure for further use.

III. PROBLEM DEFINITION AND SCOPE

A. PROBLEM STATEMENT :

To implement the multi-skill spatial crowdsourcing approaches such as greedy algorithm, divide and conquer algorithm and cost model based adaptive algorithm, in which tasks are assign to multi-skilled workers with time constraints complex spatial task.

B. SCOPE OF STATEMENT :

This application will be helpful for users who want to complete their task within time and budget. In this system User can give the feedback about his/her work and also system. System will assign task to the skilled workers.

IV. PROPOSED ARCHITECTURE

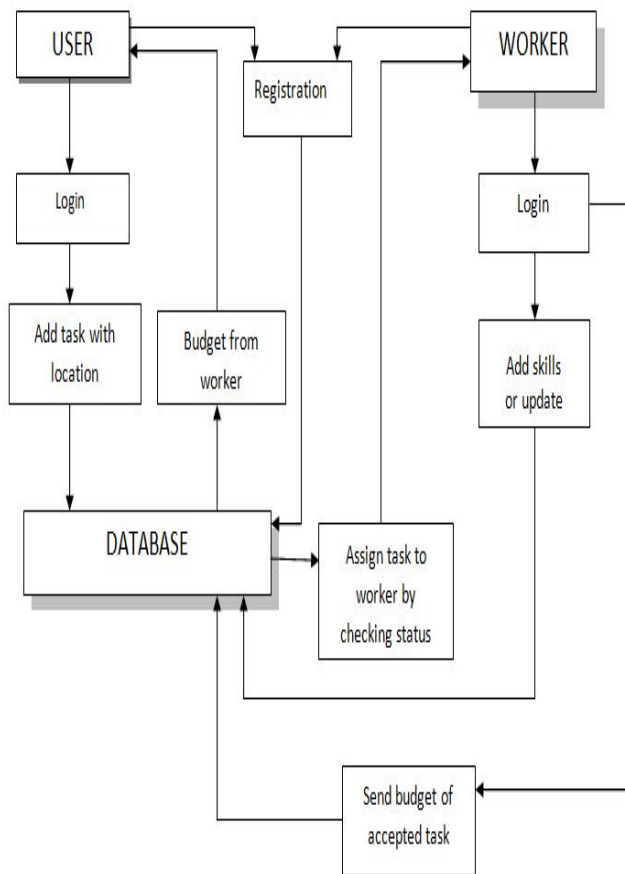


Figure 1. Proposed Architecture

V. GOALS AND OBJECTIVES

- The system which effectively handle crowdsourcing.
- In this system many task involve in one process such as,
 1. Constructing a house.
 2. Decorating a room.
 3. Performing entertainment shows for a ceremony.

VI. MATHEMATICAL MODEL FOR PROPOSED SYSTEM

Let S be a system which assign the task to worker.

$S = \{ \dots \}$
 Identify Input As I
 $S = \{ I, \dots \}$
 Let $I = \{ u, w, t \}$

The input will be the user database, Worker database and task assigned by worker.

Identify Output As O
 $S = \{ I, O, \dots \}$

O = User assigned task will assigned to multi-skill worker according to budget and time.

Identify the processes as P
 $S = \{ I, O, P, \dots \}$
 $P = \{ Ta, Tc \}$
 $Ta =$ task will be allocated to worker.
 $Tc =$ task will be completed by worker and add status as free.

Identify the failure as F
 $S = \{ I, O, P, F, \dots \}$

F= Failure occurs when the system fails to assign the task to worker

Identify Success as s
 $S = \{ I, O, P, F, s, \dots \}$

s=success occurs when task is successfully allocated to skilled worker

Identify Initial Condition as I_c
 $S = \{ I, O, P, F, s, I_c \}$
 $I_c =$ Registration of workers

VII. ALGORITHMS

1. Greedy Algorithm:

Algorithm Greedy (D, n)
 solution \leftarrow 0
 for $i \leftarrow 1$ to n do
 {
 $s \leftarrow$ select(D)
 if(Feasible(solution,s))
 then
 solution \leftarrow Union(Solution, s);
 }
 return solution

2. Divide and Conquer algorithm:

Step I:- Divide the problem into a number of subproblems that are smaller instances of the same problem.
 Step II:- Conquer the subproblems by solving them recursively.
 Step III:- Combine the solutions to the subproblems into the solution for the original problem.

3. Cost model based adaptive approach:

Step I :- Estimate the cost by applying Greedy algorithm(C_g)
 Step II:- Estimate the cost by applying Divide and conquer algorithm(C_d)

Step III:- Compare cost

If $C_g < C_d$, it selects C_g otherwise select C_d .

GREEDY, g-D&C and ADAPTIVE, with a random method, namely RANDOM, which randomly assigns workers to tasks. In particular, GREEDY selects a “best” worker-and-task assignment with the highest score increase each time, which is a local optimal approach. The g-D&C algorithm keeps dividing the problem into g subproblems on each level, until finally the number of tasks in each subproblem is 1 (which can be solved by the greedy algorithm on each one-task subproblem). Here, the parameter g can be estimated by a cost model to minimize the computing cost. The cost-model-based adaptive algorithm (ADAPTIVE) makes the trade-off between GREEDY and g-D&C, in terms of efficiency and accuracy, which adaptively decides the stopping level of the divide and-conquer.

VIII. OUTCOMES

This application will help users to get on time service in critical situation where they want also it is best option for all user to get worker faster, normally they won't get worker fast to complete task.

IX. CONCLUSION

This system proposed by the problem of the multi-skill oriented spatial crowdsourcing (MS-SC), which assigns the time-constrained and multi-skill-required spatial tasks with dynamically moving workers, such that the required skills of tasks can be covered by skills of workers and the assignment score is maximized.

This system prove the processing of the MSSC problem is NP-hard, and thus this system proposed three approximation approaches (i.e., greedy, g-D&C, and cost-model-based adaptive algorithms), which can efficiently retrieve MS-SC answers. Extensive experiments have shown the efficiency and effectiveness of system proposed MS-SC approaches on both real and synthetic data sets.

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