

MANIKARNIKA

Proactive Crowd-Sourcing for Location Based Services

By

Anuradha Vaidyanathan

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Committee in charge:

Professor Harsha Sirisena **Chair**

Professor Mark Billingham

Associate Professor Wendi Heizelman

Professor David Johnston

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Abstract

This thesis presents the design and evaluation of the *location* of a cell phone user, to enable more effective performance monitoring. One of the end-uses I propose is in emergency management, by means of a framework that distributes its functionality between establishing data-set characteristics that are relevant to the problem and a visual tool to evaluate resource-scheduling proposals.

Manikarnika is a modular framework, which finds translation in a prototype for Reverse 111. The first steps in the process were to establish whether the parameters I hypothesized as useful, indeed were. Using a statistically significant amount of traces, obtained from real calls placed on the network, the utility of the location metric was established. In order to investigate utilizing a second metric of reputation, a benchmark for evaluating ideas from Social Networks research was proposed, in order to move from arbitrary testing to a more systematic environment.

This dissertation details the measurement, design and evaluation of an end-to-end and modular framework for Emergency Management, where the functionality is distributed in order to easily incorporate the changing parameters of sources of information, emergency events, resource requirements of these events and identifying callers that might be able to provide better insight into a situation that is essentially very dynamic.

The chasm between research proposals for various end-uses and the application of the same to real life is one that I have tried to bridge in my work. By incorporating pieces from core Electrical Engineering measurements and simulation and extending the use of what was originally a tool built for training Emergency Responders to analyze various resource scheduling agents, which take into account a diversity of administrative domains, I lay the ground work for one possible solution, Reverse 111, which proposes the use of proactive crowd-sourcing for emergency response, with easy extensions to commercial location-based applications.

கற்றது கை மண்ணளவு கல்லாதது உலகளவு

ஒளவை யார்

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