Automated Knowledge Extraction from Internet for a Crisis Communication Portal

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Abstract. This paper describes the development of an Automated Knowledge Extraction Agent (AKEA) which was designed to acquire online news and document from the internet for the establishment of a knowledge based crisis communication portal. It was recognized that in times of crisis, an effective communication mechanism is essential to maintain peace and calmness in the community by providing timely and appropriate information. It is proposed that the incorporation of software agents into the crisis communication portal will be capable to send alert news to subscribed users via internet and mobile services. The proposed system consists of crawler, wrapper, name-entity tagger, AIML (Artificial Intelligence Markup language) and an animated character is used in the front-end for human computer communication.

1 Introduction

With the acceptance and increasingly reliance of the Internet, the Internet has now become "the" repository of human knowledge and information for the 21st century. On the other hand, advancements in internet and mobile communication technologies have provided effective and cheap means of communication for the modern society. The global implications of such technologies are unparalleled in the history of human civilization. Hence, the Internet now serves two of the most important functions in the modern world – as a giant virtual storehouse of data, information and knowledge, and, as the true information superhighway whereby delivery of all kinds of data and information can be done cheaply and quickly.

The potential of effective use of these two aspects are particularly important in times of crisis. Within the context of this paper, crisis may be referred to events or incidents that have the potential to cause national panic, confusion, unrest and possible catastrophe. These crises may be due to health epidemic, natural disasters and man-made tragedies such as terrorist attacks. Examples of these events that happened in the recent past are Severe Acute Respiratory Syndrome (SARS), bird flu, mad cow disease, September 11, earth quakes and tsunami. In these cases, accurate information delivered within the shortest duration of time at the lowest costs would be essential in informing the affected communities and the relevant authorities. In particular, if decisions are made quickly and appropriately, this will have the benefits of reducing the potential damages and will lead to better manage of the situations.