**Extracting Roads from Satellite Data for Effective Disaster Response**

**Abstract:**

This paper focuses on automatic road extraction in urban areas from high resolution satellite images. We propose a new approach based on machine learning. First, many features reflecting road characteristics are extracted, which consist of the ratio of bright regions, the direction consistency of edges and local binary patterns. Then these features are input into a learning container, and AdaBoost is adopted to train classifiers and select most effective features. Finally, roads are detected with a sliding window by using the learning results and validated by combining the road connectivity. Experimental results on real Quickbird images demonstrate the effectiveness and robustness of the proposed method.

**EXISTING SYSTEM:**

Road extraction in urban areas has been an important task for generating geographic information systems (GIS). Especially in recent years, the rapid development of urban areas makes it urgent to provide up-to-date road maps. The timely road information is very useful for the decision-makers in urban planning, traffic management and car navigation fields, etc.

**Disadvantage:**

2. Less Accuracy

**PROPOSED SYSTEM:**

In order to deal with the difficulties for building comprehensive road models and to make full use of the characteristics of urban roads, we propose an automatic approach based on machine learning. It can be divided into three steps. First, a series of features reflecting road characteristics are extracted. They include the ratio of bright lines on the road surface, the directional consistency of road markings and local binary patterns (LBP). These features are then input into a learning container, and AdaBoost is adopted to train classifiers and select distinct features. Finally, on the basis of the learning results roads are detected with a sliding window and further validated by combing the road connectivity.

**Advantage:**

1. More Accuracy.

**SYSTEM REQUIREMENTS**

**HARDWARE REQUIREMENTS:**

# Processor - Intel i3(min)

* Speed - 1.1 GHz
* RAM - 4GB(min)
* Hard Disk - 500 GB
* Key Board - Standard Windows Keyboard
* Mouse - Two or Three Button Mouse
* Monitor - SVGA

**SOFTWARE REQUIREMENTS:**

* Operating System - Windows10(min)
* Programming Language - Python