Abstract

Surveying highway and road for anomaly detection is a challenging task for the road transport authority in Bangladesh. Lack of sufficient budget and manpower makes this problem really hard. Moreover, as a populated and developing country, many more roads are being constructed each year. Routine maintenance cannot be conducted due to complex and costly road anomaly survey systems. Here we propose a system that can be used to automate the road surveying system for anomaly detection. Road transport authority can easily benefit from this automated system. Here we use GPS and accelerometer, an inertial sensor that can detect vibration while going on a car as our data source and use signal processing and Support Vector Machine to detect deteriorated road segments.

References

1. R. Eaton, R. Joubert, and E. Wright. Pothole primer: A public administrator’s guide to understanding and managing the pothole problem.
2. Treash, K. and Amaratunga, K. Automatic Road Detection in Grayscale Aerial Images.
4. Norden Eh Huang, Samuel S. Shen. Hilbert-Huang Transform and Its Applications
5. Burges, C.J.: A tutorial on support vector machines for pattern recognition. Data mining and knowledge discovery
6. Chih-Wei Hsu, Chih-Chung Chang, and Chih-Jen Lin. A Practical Guide to Support Vector Classification
7. Ron Kohavi. A Study of Cross-Validation and Bootstrap for Accuracy Estimation and Model Selection
8. S. Sathiya Keerthi, Chih-Jen Lin. Asymptotic Behaviors of Support Vector Machines with Gaussian Kernel

Index Terms

Computer Science  Pattern Recognition

Keywords

Road survey, Road anomaly, SVM, Pattern recognition.