**Research Methodology**

**(IN 6910)**

**Assignment**

D.N.H Senevirathna

139180A

Faculty of Information Technology

University of Moratuwa

**Analysis of the research paper “A real-time computer vision system for vehicle tracking and traffic surveillance (Coifman et al., 1998)” using scientific method.**

1. Observation

In recent years, traffic congestion has become a significant problem. Early solutions attempted to lay more pavement to avoid congestion, but adding more lanes is becoming less and less feasible. Contemporary solutions emphasize better information and control to use the existing infrastructure more efficiently.

The quest for better traffic information, and thus, an increasing reliance on traffic surveillance, has resulted in a need for better vehicle detection such as wide-area detectors; while the high costs and safety risks associated with lane closures has directed the search towards non-invasive detectors mounted beyond the edge of the pavement. One promising approach is vehicle tracking via video image processing, which can yield traditional traffic parameters such as flow and velocity, as well as new parameters such as lane changes and vehicle trajectories.

Increasing congestion on freeways and problems associated with existing detectors have spawned an interest in new vehicle detection technologies such as video image processing. Existing commercial image processing systems work well in free-flowing traffic, but the systems have difficulties with congestion, shadows and lighting transitions. These problems stem from vehicles partially occluding one another and the fact that vehicles appear differently under various lighting conditions.

1. Preliminary study
2. Problem definition
3. Hypothesis development
4. Experimental design
5. Data Collection
6. Data Analysis
7. Conclusion

References:-

Coifman, B., Beymer, D., McLauchlan, P., Malik, J., 1998. A real-time computer vision system for vehicle tracking and traffic surveillance. Transp. Res. Part C Emerg. Technol. 6, 271–288.