

**Universiti Teknologi MARA**

**Analysis of Vehicle Density Estimation  
for Traffic Congestion in VANET**

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**Thesis submitted in fulfilment of the requirements  
for Bachelor of Computer Sciences (Hons.)  
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Mathematical Sciences**

**DECEMBER 2018**

## **STUDENT DECLARATION**

I certify that this thesis and the project to which it refers was the product of my own work and that any idea or quotation from the work of other people published or otherwise were fully acknowledged in accordance with the standard referring practices of the discipline.

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## **ABSTRACT**

Traffic congestion was a big problem faced by road users (especially drivers) and reducing the traffic congestion in a specific location was a difficult task. Therefore, monitoring traffic congestion was one of the technique to minimize the problem. Vehicle density was the key element used to monitor traffic conditions and offer a better judgement in a congested area. The objective of the project was to implement vehicle density formula in a VANET simulation using SUMO and NS2 then analyze the result based on the vehicle density. This project using SUMO 0.32.0, NS 2.35 and Microsoft Excel. The simulation has been successfully executed with the trace file (map.tr) produced. However, there was problem in extracting the required data for generating the vehicle density. The future work will be continued to produce better results.

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