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Clustering in Vehicular Networks

Seminararbeit im Fach Informatik

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Distributed Embedded Systems (CCS Labs)
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Clustering in Vehicular Networks

Seminararbeit im Fach Informatik

vorgelegt von

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**Distributed Embedded Systems
(CCS Labs)**

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Abgabe der Arbeit: **16. Januar 2018**

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Declaration

I declare that the work is entirely my own and was produced with no assistance from third parties.

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(Gaurav Kumar Singh)

Paderborn, 16. Januar 2018

Abstract

This thesis captures an overview of ideas, techniques, results and future possibilities of clustering in vehicular networks. Clustering is a technique to group nodes based on a selected criteria which defines certain level of similarities among the nodes. Grouping the nodes together in such a way helps define or design a set of functionalities applicable only to the group and can be applied to smaller sub-set. In a vehicular networking environment clustering presents possibilities to group vehicles based on a parametr of interest and help to reduce the network traffic, achieve better network throughput, effective information dissemination.

The thesis presents a set of parameter and respective algorithm based on them for vehicular networks as a comparative study. First chapter presents the motivation behind the clustering and outlines the basic set of problems which is presented by vehicular Networks which the algorithm try to address. The second chapter describes the algorithms grouping them based on the main parameters used for clustering. The third chapter captures a comparative study, highlighting benefits and drawbacks of different approaches based on simulation results. Finally the thesis captures some ideas which will give an overview of the future research work on the topic.

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Chapter 1

Introduction

- general motivation for your work, context and goals.
- context: make sure to link where your work fits in
- problem: gap in knowledge, too expensive, too slow, a deficiency, superseded technology
- strategy: the way you will address the problem
- recommended length: 1-2 pages.

Chapter 2

Fundamentals

- describe methods and techniques that build the basis of your work
- include what's needed to understand your work (e.g., techniques, protocols, models, hardware, software, ...)
- exclude what's not (e.g., anything you yourself did, anything your reader can be expected to know, ...)
- review related work(!)
- recommended length: approximately one third of the thesis.

Chapter 3

Developed architecture / System design / Implementation / ...

- describe everything you yourself did (as opposed to the fundamentals chapter, which explains what you built on)
- start with a theoretical approach
- describe the developed system/algorithm/method from a high-level point of view
- go ahead in presenting your developments in more detail
- recommended length: approximately one third of the thesis.

Chapter 4

Evaluation

- measurement setup / results / evaluation / discussion
- whatever you have done, you must comment it, compare it to other systems, evaluate it
- usually, adequate graphs help to show the benefits of your approach
- each result/graph must not only be described, but also discussed (What's the reason for this peak? Why have you observed this effect? What does this tell about your architecture/system/implementation?)
- recommended length: approximately one third of the thesis.

Chapter 5

Conclusion

- summarize again what your paper did, but now emphasize more the results, and comparisons
- write conclusions that can be drawn from the results found and the discussion presented in the paper
- future work (be very brief, explain what, but not much how, do not speculate about results or impact)
- recommended length: one page.

List of Abbreviations

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