

A
Dissertation
On

Multi-Objective Routing Optimization

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Master of Technology

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by

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ABSTRACT

Wireless Sensor Networks are derived of hundreds to thousands of limited energy battery powered sensor nodes. The use and applicability of WSNs has increased in vivid areas like vehicular movement, weather monitoring, security and surveillance, industry applications etc. The limited powered nodes in WSNs sense the environment and send the desired information to a processing centre (base station) either directly or via a mechanism for optimization.

In this dissertation we will develop a model to calculate optimal value of initial energy while satisfying other performance criteria. This type of optimization is called multi-objective optimization. We will consider a holistic view of the network which captures the cross-interactions among the various interference management techniques which are implemented at different layers of the protocol stack. The result will be a framework which is a complex multi-objective optimization problem which can be solved efficiently through existing multi-objective search techniques. In our work we will consider three parameters namely delay, robustness and energy as the performance metric. These parameters are very critical from performance point of view.

Keywords: Multi-Objective Optimization, Routing Protocols, Time Delay, Robustness, Energy consumption.

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CERTIFICATE

This is to certify that the dissertation titled “**Multi-Objective Routing Optimization**” is a bonafide record of work done by **Kamal Garg, Roll No. 2K12/CSE/08** at **Delhi Technological University** for partial fulfilment of the requirements for the degree of Master of Technology in Computer Science & Engineering. This project was carried out under my supervision and has not been submitted elsewhere, either in part or full, for the award of any other degree or diploma to the best of my knowledge and belief.

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