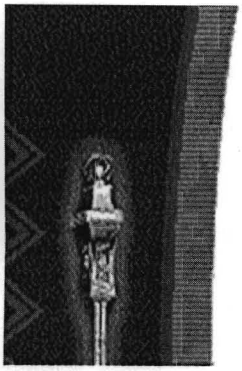

National University of Science and Technology

Think in Other Terms

FACULTY OF APPLIED SCIENCES

DEPARTMENT OF COMPUTER SCIENCE

NETWORK LOAD BALANCING USING THE GENETIC ALGORITHM

BY

JOSEPH MUTENGENI

STUDENT NUMBER : **N0112460 X**

SUPERVISOR : **MR. D. MUSUNDIRE**

CO-SUPERVISOR : **MR. T. NYATHI**

JUNE 2013

This dissertation is submitted to the Department of Computer Science of the National University of Science and Technology in partial fulfilment of the requirements of the Master of Science Degree in Computer Science

Abstract

In this dissertation we developed a Network Load Balancer using the Genetic Algorithm. The approach undertaken considers the heterogeneity in the processing rates of the nodes as well as the randomness in the delays imposed by the communication medium. The optimal one-shot load balancing policy using the Genetic Algorithm is developed and subsequently extended to develop an autonomous and distributed load-balancing policy that can dynamically reallocate incoming external loads at each node.