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**HOPFIELD MODEL
FOR SHORTEST PATH COMPUTATION AND
ROUTING IN ATM NETWORK**

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MASTER OF COMPUTER SCIENCE

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**HOPFIELD MODEL
FOR SHORTEST PATH COMPUTATION AND
ROUTING IN ATM NETWORK**

by

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Information Technology of University Malaya in
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Table of Contents

ACKNOWLEDGMENT.....	I
TABLE OF CONTENTS	II
LIST OF FIGURES	V
LIST OF TABLES.....	VI
ABSTRACT.....	VIII
CHAPTER 1.....	1
INTRODUCTION	1
1.1 BACKGROUND	1
1.2 OBJECTIVES.....	3
1.3 SCOPE.....	3
1.4 THESIS ORGANIZATION.....	4
1.5 CHAPTER SUMMARY.....	5
CHAPTER 2.....	6
LITERATURE REVIEW.....	6
2.1 ATM	6
2.1.1 ATM CELL	7
2.1.2 VPC AND VCC	9
2.1.3 ATM SWITCHING OPERATIONS	9
2.1.4 ATM PROTOCOL ARCHITECTURE AND ATM SERVICE CATEGORIES	10
2.1.5 ATM TRAFFIC MANAGEMENT	13
2.2 ROUTING.....	14
2.2.1 SOURCE ROUTING AND HOP-BY-HOP ROUTING	14
2.2.2 ROUTING ALGORITHM TYPES	15
2.2.3 ROUTING METRICS	16
2.2.4 DIJKSTRA'S SHORTEST PATH ROUTING ALGORITHM	17
2.2.5 PNNI AND ROUTING IN ATM NETWORK	20
2.2.6 TOPOLOGY OF PNNI NETWORK	21
2.2.7 TOPOLOGY STATE PARAMETER	22

2.2.8	THE FLOODING MECHANISM	24
2.2.9	PATH SELECTION	24
2.2.10	RELATIONSHIP BETWEEN ROUTING, CAC, NETWORK RESOURCE MANAGEMENT AND NETWORK PROVISIONING	27
2.2.11	DYNAMIC ROUTING	29
2.2.12	DYNAMIC ROUTING FOR HANDLING LINKS OR NODES FAILURE	32
2.3	ARTIFICIAL NEURAL NETWORK.....	33
2.3.1	BIOLOGICAL NEURON	34
2.3.2	ARTIFICIAL NEURONS	36
2.3.3	BASIC NEURON (McCULLOCH-PITTS) MODEL	37
2.3.4	THE HOPFIELD MODEL OF ARTIFICIAL NEURON	39
2.3.5	ARCHITECTURE OF ARTIFICIAL NEURAL NETWORKS	40
2.3.6	HOPFIELD NEURAL NETWORK	42
2.3.7	BOLTZMANN MACHINE AND SIMULATED ANNEALING	44
2.3.8	MEAN-FIELD ANNEALING ALGORITHM	47
2.3.9	HOPFIELD NETWORK AND ITS MODIFICATION FOR COMBINATORIAL OPTIMIZATION	48
2.3.10	USING HOPFIELD MODEL FOR SHORTEST PATH ROUTING IN COMPUTER NETWORK	50
2.4	CHAPTER SUMMARY.....	58
CHAPTER 3.....		59
METHODOLOGY.....		59
3.1	CONSTRUCTING A NEURAL NETWORK FOR SOLVING COP	59
3.2	ANALYSIS	60
3.3	THE REPRESENTATION OF THE SHORTEST PATH ROUTING PROBLEM	61
3.4	THE HOPFIELD NETWORK.....	62
3.4.1	HOPFIELD MODEL ALGORITHM FOR SOLVING SHORTEST PATH ROUTING	64
3.5	THE BOLTZMANN MACHINE	65
3.5.1	BOLTZMANN MACHINE ALGORITHM FOR SOLVING SHORTEST PATH ROUTING	69
3.6	CHAPTER SUMMARY	69

CHAPTER 4.....	70
SIMULATION MODEL AND EXPERIMENT RESULTS.....	70
4.1 THE 5-NODE COMPUTER NETWORK	70
4.2 SIMULATION MODEL	71
4.2.1 SIMULATION MODEL FOR HOPFIELD NEURAL NETWORK	72
4.2.2 SIMULATION MODEL FOR BOLTZMANN MACHINE	77
4.3 CHAPTER SUMMARY.....	78
CHAPTER 5.....	79
DISCUSSION AND CONCLUSION	79
5.1 CONCLUSIONS.....	79
5.2 FURTHER STUDY.....	81
REFERENCES	82

List of Figures

Figure 2.1 UNI and NNI Signaling.....	7
Figure 2.2 Basic format of the UNI and NNI.....	8
Figure 2.3 VCC and VPC concepts.....	9
Figure 2.4 Virtual Circuit and Virtual Path Switching.....	10
Figure 2.5 ATM protocol architecture	11
Figure 2.6 Service class relationship.....	12
Figure 2.8 Switching system architectural reference model for PNNI.....	21
Figure 2.9 The PNNI network hierarchy model [3].....	22
Figure 2.10 Operation of crankback [3].....	25
Figure 2.11 DTL processing in connection setup [3].....	26
Figure 2.12 Network provisioning, network resources management, CAC and routing relationship [11]	27
Figure 2.13 Layer architecture [11]	28
Figure 2.14 A simple neuron.....	34
Figure 2.15 McCulloch-Pitts Model of artificial neuron	37
Figure 2.16 Electronic model of the basic neuron cell.....	39
Figure 2.17 Hopfield model of artificial neuron	40
Figure 2.18 Continuous Hopfield Network.....	43
Figure 2.19 A 5-node network	51
Figure 2.20 A 5-node network with pseudo link.....	52
Figure 3.1 Boltzmann machine architecture	66
Figure 4.1 A 5-node computer network	70

List of Tables

Table 2.1	Field and description of the ATM cell	8
Table 2.2	Topology State Parameters	23
Table 2.3	Cost matrix of a 5-node network.....	50
Table 2.4	Rauch and Winarske's representation of the shortest path	51
Table 2.5	Thomopoulos proposed representation of the shortest path.....	52
Table 3.1	Representation of the shortest path	62
Table 4.1	Link cost matrix	73
Table 4.2	Simulation result 1 of HOPFIELD2.....	74
Table 4.3	Simulation result 2 of HOPFIELD2.....	74
Table 4.4	Simulation result 3 of HOPFIELD2.....	75
Table 4.5	Simulation result 4 of HOPFIELD2.....	75
Table 4.6	Simulation result 5 of HOPFIELD2.....	76
Table 4.7	Simulation result 6 of HOPFIELD2.....	76
Table 4.8	Simulation result of the BOLTZMANN1 machine	77
Table 5.1:	Comparison of simulation results between HOPFIELD1 and BOLTZMANN1	80

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ABSTRACT

This research focuses on the application of Hopfield neural network and Boltzmann machine in solving the shortest path routing problem in the ATM network environment. Hopfield neural network and Boltzmann machine are two types of neural network which are commonly used for solving optimization problem such as the shortest path routing problem.

The objectives of this research are to construct a Hopfield neural network and a Boltzmann machine for solving the shortest path routing problem in the ATM network. Both of these two types of neural network are built based on a chosen example of an ATM network. The Private Network-Node Interface (PNNI) network is a type of ATM network in which the shortest path routing mechanism can be used.

Simulation of the shortest path computation for an ATM network is done for both the Hopfield neural network and the Boltzmann machine.