Dedicated to my parents and late grandparents

Declaration

I, Carynthia Kharkongor, hereby declare that the thesis entitled *"Compact Representation of Itemsets for Association Rule Mining"* submitted to the Department of Computer Science and Engineering under the School of Engineering, Tezpur University, in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Computer Science and Engineering is based on the bona-fide work carried out by me under the supervision of my supervisors. The results embodied in this thesis have not been submitted in part or in full, to any other university or institute for award of any degree or diploma.

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Certificate

This is to certify that the thesis entitled **"Compact Representation of Itemsets for Association Rule Mining"** submitted to Tezpur University in the Department of Computer Science and Engineering under the School of Engineering in partial fulfillment of the award of the degree of Doctor of Philosophy in Computer Science and Engineering is a record of research work carried out by **Carynthia Kharkongor** under my supervision and guidance.

All the helps received by her from various sources have been duly acknowledged. No part of this thesis has been submitted else where for award of any other degree.

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Certificate

This is to certify that the thesis entitled **"Compact representation of itemsets for Association Rule Mining"** submitted by **Carynthia Kahrkongor** to Tezpur University in the Department of Computer Science and Engineering under the School of Engineering in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Computer Science and Engineering has been examined by us on .... and found to be satisfactory.

The Committee recommends for award of the degree of Doctor of Philosophy.

Signature of Principal Supervisor   Signature of External Examiner

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Carynthia Kharkongor

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Glossary of Terms

FP	Frequent Pattern
SETM	Set-oriented mining
ARM	Association Rule Mining
CSA	Crow Search Algorithm
DHP	Direct Hashing and Pruning
ITARM	Incremental Temporal Association Rules Mining
OCD	Offline Candidate Determination
NDCSA-CAR	New Discrete Version of the Crow Search Algorithm (CSA)
GA-PPARM	Genetic Algorithm Privacy Preserved Association Rule Mining
IFTARMFGT	Incremental Fuzzy Temporal Association Rule Mining using Fuzzy Grid Table
TM	Transaction Mapping
DIC	Dynamic Itemset Counting
NDI	Non Derivable Itemset
EHR	Electronics Health Record
CAG	Cytosine-Adenine-Guanine
BD	Behcet Disease
FSFIM	Fuzzy Set-Based Frequent Itemset Mining
UB	Upper Bound
LB	Lower Bound

Symbols and Notations

C_k	Candidate itemset
L_k	Large itemset
I_k	Itemset
t_k	Transaction
v_k	Vertex
e_k	Edges
G	Graph