LIST OF SYMBOLS AND ABBREVIATIONS

\( f^i_h \)  - Actual output

AMM - Adaptive Monitoring Method

AllMOP - All frequent Movement Patterns

ABC - Artificial Bee Colony

BP - Back propagation

\( E^{(e)} \) - Back propagation error

\( Y_{ix} \) - Bias function

\( c^y_m \) - \( l^{th} \) chromosome of the vehicle \( v_m \)

CODEM - Co-location and De-location patterns Mining Algorithm

CPI-tree - Co-location Pattern Instance tree

Cp - Conditional Probability

CRPM - Continuous Route Pattern Mining

DBMS - Database Management Systems

\( D^i_h \) - Desired output

\( t_1, t_2, \ldots, t_i \) - Different time period

DAG - Directed Acyclic Graph

\( dist(a, b) \) - Distance between the nodes

D - Dynamic threshold

\( E_3TP \) - Effective, Efficient and Easy Trajectory Prediction algorithm

\( \gamma \) - Error rate of the learning

EA - Evolutionary Algorithms

FFBNN - Feed Forward Back Propagation Neural Network

FNN - Feed forward Neural Networks

\( F^y_m \) - Fitness function of the \( l^{th} \) chromosome
\[ f_{p_z} \] - Fitness value of the path \( p_z \)

\[ p_1p_2...p_z \] - Frequent paths

FP - Frequent Pattern

GA - Genetic Algorithm

GIS - Geographical Information Systems

G_{best} - Global best position

GPS - Global Positioning System

GCA - Graph of Cellular Automata

HMM - Hidden Markov Models

\( n_s \) - Hidden units.

\( i_1i_2...i_x \) - Index value for the frequent paths

\( f_{i_x} \) - Individual fitness value of the index value \( i_x \).

ITS - Intelligent Transportation Systems

I - Iterations

k-NF - k-Nearest Features

KNN - K-Nearest Neighbor classifier

\( \alpha \) - Learning Rate

LBS - Location Based Services

MaxMOP - Maximum MOvement Patterns

MOST - Moving Objects Spatio-Temporal model

\( N_e \) - Neighborhood membership function

N - Neighborhood relations

\( n_{e_{cl}} \) - No of neighbor groups containing that candidate co-location

\( n \) - Number of nodes

OGC - Open Geospatial Consortium

Pi - Participation index

Pr - Participation ratio

PSO - Particle Swarm Optimization

\( P_{best,i} \) - Personal best position
$x_i$ - Position vector of particle
$c_1$ and $c_2$ - Positive acceleration constants
PUTMODE - Prediction of Uncertain Trajectories in Moving Objects Databases
$P^j$ - Probability of the $j^{th}$ parameter
RAM. - Random Access Memory
$r_{1j}^f$ and $r_{2j}^f$ - Random numbers from uniform distribution
RLP - Rule-based Location Prediction
SOM - Self Organizing Map
$f_{i_1}, f_{i_2}, \ldots, f$ - Set of feature instances id
$u_1, u_2, \ldots, u_p$ - Set of location
$s_{f_1}, s_{f_2}, \ldots, s_{f_n}$ - Set of spatial feature types
$\lambda$ - Slope parameter
SDM - Spatial Data Mining
d - Threshold value
$\text{ne}$ - Total no of neighbor groups
$U(x_{\text{min}}, x_{\text{max}})$ - Uniform distribution
UGVs - Unnamed Ground Vehicles
UDT - User Defined Types
$Z_i$ - Vehicle source
$v_m$ - Vehicles
$v_i^l$ - Velocity vector of particle
$W_i$ - Weight
$w_{n-1} & wn$ - Weight value of the nodes
WSN - Wireless Sensor Networks