

LIST OF ABBREVIATIONS

ABC	-	Artificial Bee Colony
AC	-	Accuracy Rate
ACO	-	Ant Colony Optimization
ACS	-	Ant Colony System
AIC	-	Akaike Information Criterion
ANMI	-	Average Normalized Mutual Information
ANN	-	Artificial Neural Networks
BCO	-	Bee Colony Optimization
BIC	-	Bayesian Information Criterion
BSGP	-	Bipartite Spectral Graph Partitioning
CBGC	-	Consistent Bipartite Graph Copartitioning
CF	-	Collaborative Filtering
CMRF	-	Combinatorial Markov Random Field
COA-GA	-	Cuckoo Optimization Algorithm (COA) with a more traditional Genetic Algorithm (GA)
CSA	-	Cuckoo Search Algorithm
CSCA	-	Cuckoo Search Clustering Algorithm
DBI	-	Davies-Bouldin index
DNA	-	Deoxyribo Nucleic Acid
DRIVE	-	Digital Retinal Images for Vessel Extraction
ECG	-	Electrocardiogram
EM	-	Expectation Maximization
EPCA	-	Enhanced Weighted version of Principal Component Analysis
FA	-	Firefly Algorithm
FCM	-	Fuzzy C Means
FEMI	-	Fuzzy Expectation Maximization and Fuzzy Clustering-based Missing Value Imputation Framework
FPCA	-	Fast Principal Component Analysis

FTC	-	Fuzzy Triclustering
GA7	-	Genetic Algorithm
GMM	-	Gaussian Mixture Model
HBLCoClust	-	Hash-based Co-Clustering
HC	-	Hierarchical Clustering
HPSO	-	Hierarchical Particle Swarm Optimization
IACO	-	Improved Ant Colony Optimization
IACO-RECCA	-	Improved Ant Colony Optimization (IACO) for Robust Ensemble Co-Clustering Algorithm
ICS	-	Improved Cuckoo Search
ICSELM	-	Improved Cuckoo Search based Extreme Learning Machine
ICS-RECCA	-	Improved Cuckoo Search (ICS) for Robust Ensemble Co-Clustering Algorithm
IRM	-	Infinite Relational Model
ITCC	-	Information-Theoretic Co-Clustering
KNN	-	K Nearest Neighbor
LDA	-	Latent Dirichlet Allocation
LSH	-	Locality-Sensitive Hashing
MAR	-	Missing At Random
MCAR	-	Missing Completely At Random
MI	-	Mutual Information
MLP	-	Multilayer Perceptron
MMRC	-	Membership Relational Clustering
NB	-	Naive Bayes
NMAR	-	Not Missing At Random
NMF	-	Non-negative Matrix Factorization
NMI	-	Normalized Mutual Information
NN	-	Neural Networks
O-NMTF	-	Orthogonal Nonnegative Matrix Tri-factorization
PAM	-	Partitioning Around Medoids

PCA	-	Principal Component Analysis
PFCM	-	Possibilistic Fuzzy C-Means
PLIC	-	Pseudo-Likelihood Information Criterion
PLSA	-	Probabilistic Latent Semantic Analysis
PSO	-	Particle Swarm Optimization
RBF	-	Radial Basis Function
SI	-	Swarm Intelligence
SLFN	-	Single Layer Feed forward Neural networks
SRC	-	Spectral Relational Clustering
SS-CMRF	-	Semisupervised Combinatorial Markov Random Field
SS-KK	-	Semi supervised Kernel K-means
SS-SNC	-	Semisupervised Spectral Normalize Cuts
STARE	-	Structured Analysis of the Retina
SVD	-	Singular Value Decomposition
SVM	-	Support Vector Machine
TSVM	-	Transductive Support Vector Machines

LIST OF SYMBOLS

$\phi^{(ANMI)}(\phi, (\mu, \nu))$	-	Average Normalized Mutual Information (ANMI) between a single co-clustering (μ, ν)
Q and R	-	Average ranks
$\rho^{(q)}$	-	Column clusters
V_c	-	Column labeling vertices
T	-	Consensus function
N	-	Data entries
(i, j)	-	Data points
δ	-	Delta
D_r and D_c	-	Diagonal matrices
D	-	Dimension
D_i^2	-	Distance between average ranks
$d_{i,j}$	-	Distance between the nodes 'i' and 'j'
$ E _{ij}$	-	Edge weight between two vertices i and j
E	-	Edges
C_{rc}	-	Edge-weights between labeling vertices with row V_r and column V_c .
C_{rr}	-	Edge-weights between row labeling vertices (V_r)
A	-	Eigenvectors of matrix
$H(X)$	-	Entropy of X
$H(Y)$	-	Entropy of Y
\oplus	-	Entry-wise multiplication
V_s & V_d	-	Find the shortest path among a given source node 'S' and a given destination node 'd' in 'G'.
f_i	-	Fitness function
$G = (V, E)$	-	Graph
$G = (V_r, V_c, E)$	-	Graph under Bipartite model

$n_{i,j}$	-	Heuristic value calculated as $1/d_{i,j}$
β	-	Influencing factor of heuristic value
α	-	Influencing factor of pheromone value
x_i	-	Initial population of n host nests
$L'evy$	-	L'evy distribution
L	-	Laplacian matrix
$N^{\{m \times t, n \times t\}} \rightarrow N^{\{m, n\}}$	-	Mapping function between a set of co-clustering
M	-	Matrix
$I(X, Y)$	-	Mutual information between X and Y
U and V	-	Nonnegative low rank matrices with $n \times k$ and $k \times d$, sizes correspondingly
A	-	Nonnegative matrix
$\phi^{(NMI)}$	-	Normalized mutual information estimate
$ O $ and $ F $	-	Number of objects and features in a co-cluster correspondingly
(O_α^j, F_α^j)	-	Number of objects and features in co-cluster CO_β according to (μ^j, v^j)
b_n	-	Number of possible values of attribute ' A_n '.
$(\mu, v)^{(k, l, -opt)}$	-	Optimal combined co-clustering
Y_c	-	Partition on column labeling vertex set V_c
Y_r	-	Partition on row labeling vertex set V_r
$T_{i,j}$	-	Pheromone value on edge $e(i, j)$
$p_{i,j}$	-	Probability of ant
r_1, r_2, r_3, r_4	-	Random numbers
(X_r, X_c) and (Y_r, Y_c)	-	Row and column cluster labeling variables respectively
$k^{(q)}$	-	Row clusters
V_r	-	Row labeling vertices
r_s	-	Spearman's rank correlation coefficient
$\alpha = 0$	-	Step size

a	-	Total Number of attributes
$ E $	-	Total number of edges in G
$ V $	-	Total number of vertices
X and Y	-	Two vectors
$U(0,1)$	-	Uniform distribution
V, R	-	Vertex sets
r_w	-	Weighted rank measure of correlation