List of Tables

2.1 The Comparison of the Characteristics of the Diffusion Models [1] 21

2.2 The Comparison of the Characteristics of The Existing IM Algorithms – I 41

2.3 The Comparison of the Characteristics of the Existing IM Algorithms – II 42

2.4 The Comparison of the Characteristics of the Existing Context-aware IM Algorithms – I 59

2.5 The Comparison of the Characteristics of the Existing Context-aware IM Algorithms – II 60

2.6 The Comparison of the Performance of the Existing IM Algorithms 61

2.7 The Statistical Information of the Real-world Network Datasets 65

3.1 The Working of Update Phase of LAPSO-IM in Running Example 97

3.2 The Comparison of Influence Spread (represented in terms of percentage of nodes in original social networks) and Running Time (in terms of seconds) under IC Diffusion Model in Various Datasets at $|S| = 50$ 108

3.3 The Comparison of Influence Spread (represented in terms of percentage of nodes in original social networks) and Running Time (in terms of seconds) under WC Diffusion Model in Various Datasets at $|S| = 50$ 108

3.4 The Comparison of Influence Spread (represented in terms of percentage of nodes in original social networks) and Running Time (in terms of seconds) under LT Diffusion Model in Various Datasets at $|S| = 50$ 108

3.5 The Friedman Test on Average Influence Spread under IC Diffusion Model 109

3.6 The Estimation of p-value based on the Holland Procedure for Post-hoc Analysis on Average Influence Spread under IC Diffusion Model 113

3.7 The Estimation of p-value based on the Holland Procedure for Post-hoc Analysis on Average Influence Spread under WC Diffusion Model 113

3.8 The Estimation of p-value based on the Holland Procedure for Post-hoc Analysis on Average Influence Spread under LT Diffusion Model 113

3.9 The Estimation of p-value based on the Holm procedure for Post-hoc Analysis on Average Influence Spread under IC Diffusion Model 113

3.10 The Estimation of p-value based on the Holm Procedure for Post-hoc Analysis on Average Influence Spread under WC Diffusion Model 114

3.11 The Estimation of p-value based on the Holm Procedure for Post-hoc Analysis on Average Influence Spread under LT Diffusion Model 114

4.1 Estimation of Diffusion Degree based on SSA in Running Example 137

4.2 Speedup % of Proposed Algorithms against the State-of-the-art Algorithms in Different Datasets regarding Influence Spread 145

4.3 Speedup % of Proposed Algorithms against the State-of-the-art Algorithms in Different Datasets regarding Running Time 146

5.1 The Computation of Accumulated Influence *Acc* based on Algorithm NextSeedA for Product Diffusion Graph G^1 . . 174

5.2 The Influence Spread Comparison of Algorithm under IM2 Framework for Higgs Twitter Dataset at $k = 50$ 178

5.3 The Influence Spread Comparison of Algorithm under IM2 Framework for Co-author Dataset at $k = 50$ 178

5.4 The Influence Spread Comparison of Compared Algorithms under MIM Framework for Different m at $k = 50$ 180

6.1 The Computation of Overall Index $OI(x,y)$ of Each Existing Links (x,y) based on CLP-ID Algorithm 202

6.2 The Comparison of the Complexity of CLP-ID with the State-of-the-art Algorithms 203

6.3 Comparison of CLP-ID with the State-of-the-art Algorithms in terms of Accuracy Quantified by AUPR . . 230

6.4 Comparison of CLP-ID with the State-of-the-art Algorithms in terms of Accuracy Quantified by Recall . . 231

6.5 Comparison of CLP-ID with the State-of-the-art Algorithms in terms of Accuracy Quantified by AUC . . . 232

6.6 Comparison of CLP-ID with the State-of-the-art Algorithms in terms of Accuracy Quantified by Precision . 233

6.7 The Friedman Test on AUPR 237

6.8 The Posthoc Friedman Conover Test (Control Method = CLP-ID) Corresponding Different Accuracy Metrics . . . 238