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Question Paper Code : 70387

M.E./M.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Elective

Biometrics and Cyber Security

CP5074 – SOCIAL NETWORK ANALYSIS

(Common to M.E. Computer Science and Engineering/M.E. Computer Science and Engineering (With Specialization in Networks)/M.E. Multimedia Technology/M.Tech. Information Technology)
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Give the limitations of current Web.
2. What is network analysis ?
3. What is Map-reduce ?
4. Define Node degree.
5. What is a Web community ?
6. Detecting communities from given social networks are practically important. Why ?
7. Describe the scenario of expert-location problem.
8. Define link prediction problem.
9. Abbreviate ARBITER.
10. What are the two types of Nodes in Bayesian networks are typically categorized ?

PART – B

(5×13=65 Marks)

11. a) Briefly explain the following :
 - i) Blogs and online communities (5)
 - ii) Web-based networks. (8)

(OR)

 - b) Explain in detail on the key concepts in social network analysis. (13)



12. a) i) Write about various methods measure centrality of a social network. (6)
 ii) Explain on random walks and their applications. (7)
 (OR)
- b) i) Explain the various layouts in Node-Edge diagram with suitable example. (7)
 ii) Discuss on Hybrid representation of visualizing social networks. (6)
13. a) i) Explain briefly the methodologies of network community mining with suitable diagram. (6)
 ii) Discuss about the applications of community mining algorithms. (7)
 (OR)
- b) i) Write elaborately on metrics involved in evaluating communities. (5)
 ii) Discuss in detail on methods of community detection. (8)
14. a) i) Describe in detail about influence related statistics. (8)
 ii) Describe the methodologies have been developed to measure the personality of an individual. (5)
 (OR)
- b) i) Discuss various models of expert location with score propagation. (9)
 ii) Write in detail on link prediction by local probabilistic models. (4)
15. a) A classification algorithm yields the following values :
 $|TP| = 100$, being the amount of true positive classifications;
 $|TN| = 50$, the amount of true negative classifications;
 $|FP| = 10$, the amount of false positive classifications and
 $|FN| = 5$, the amount of false negative classifications.
 Calculate accuracy, precision, recall, f1 – score for the corresponding algorithm. (13)
 (OR)
- b) i) Draw and explain ARBITER's system architecture. (7)
 ii) Describe system architecture using 2 Fold Random cross folding for single biometric trait. (6)

PART – C

(1×15=15 Marks)

16. a) Explain in detail how web communities evolve and what kinds of metrics can measure degree of the evolution. (15)
 (OR)
17. b) Derive a high level architecture for emotion classification of tweets and brief its working model. (15)