PVP 20

PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY

(Autonomous)

Kanuru, Vijayawada-520007

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (AI&ML)

IV B.Tech I Semester

Social Media Analytics

Course Code	**20AM4702B**	**Year**	IV	**Semester**	I
Course Category	PEC	**Branch**	CSE (AI&ML)	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	Machine Learning
Continuous Internal Evaluation	30	**Semester End Evaluation**	70	**Total Marks**	100

Course Outcomes		
Upon Successful completion of course, the student will be able to		
CO1	Describe social media landscapes, data types, and network models to understand network formation and analysis.	**L2**
CO2	Apply graph theory metrics and tools to evaluate social networks and extract meaningful insights through network analysis.	**L3**
CO3	Apply text mining and sentiment analysis to extract opinions and behaviors from unstructured social media data.	**L3**
CO4	Analyze social influence, user behavior, and campaign effectiveness to evaluate real-world case studies using social media platforms and tools..	**L4**

Contribution of course outcomes towards achievement of program outcomes & Strength of correlations (3: Substantial,2: Moderate,1: Slight)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P010**	**PO11**	**PSO1**	**PSO2**
CO1	**2**												
CO2	**3**												
CO3	**3**											**2**	
CO4		**3**									**2**		

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Syllabus		
Unit No	**Contents**	**CO**
I	**Introduction to social media and Networks:** Social media landscape: data types, sources (public vs. private), Applications of SMA in business and research, social networks, and information networks: basic definitions and examples, Models of network formation, random graphs.	CO1
II	**Network Analysis and Graph Theory:** Key metrics: Degree, Closeness, Betweenness, PageRank, Eigenvector centrality, Community detection: node-centric, group-centric, hierarchical methods, Graph clustering, topology discovery.	CO1, CO2
III	**Text Mining and Sentiment Analysis:** Text preprocessing: tokenization, stemming, TF-IDF, Classification and clustering algorithms for text, Lexicon-based and ML-based sentiment analysis, Slang sentiment, opinion extraction from reviews and posts.	CO1, CO2, CO3
IV	**Influence, Behavior, and Campaign Analytics:** Spread of influence, disease, and information on networks, Influence maximization and viral marketing, Behavior modeling (individual and collective), Campaign analysis: reach, engagement, impressions.	CO1, CO3, CO4
V	**Applications and Case studies:** Facebook, Twitter, LinkedIn, Reddit, Link prediction techniques and evaluation, social listening and recommendation systems.	CO1, CO2, CO3, CO4

Learning Resources

Text Books

1. Social Media Mining – Reza Zafarani, Mohammad Ali Abbasi & Huan Liu, 1st edition, April 28, 2014, Cambridge University Press
2. Social Network Data Analytics – Charu C. Aggarwal (editor), 1st edition, March 17, 2011, Springer

References

1. Mining the Social Web: Analyzing Data from Facebook, Twitter, LinkedIn, and Other Social Media Sites – Matthew A. Russell, 2nd edition, 2013, O'Reilly Media
2. Social Media Metrics: How to Measure and Optimize Your Marketing Investment – Jim Sterne, 1st edition, 2010, Wiley
3. Networks, Crowds, and Markets: Reasoning About a Highly Connected World – David Easley & Jon Kleinberg, 1st edition, 2010, Cambridge University Press

E-Resources

1. https://nptel.ac.in/courses/110107129
2. https://emplifi.io/resources/blog/social-media-analytics-the-complete-guide