AMRITA VISHWA VIDYAPEETHAM
DEEMED TO BE UNIVERSITY

19CSE337 Social Networking Security

Course Overview

Topics to discuss

- Faculty
- Course Objective
- Course Website
- Course Outcomes
- Syllabus
- Textbooks/Reference
- Evaluation Plan

Faculty

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Course Objective

- This is an undergraduate level course that aims to build a foundation in social networks for students aspiring a career or research in social network analysis. The students will learn basics of social networks, graph representation of networks, various measures of social network analysis, security risks in social networks and applications of social network analysis in AI and ML.

Course Website

- 19CSE337 Social Networking Security - Home (sharepoint.com)

Course Outcomes

CO1	Understand the Graph theoretic concepts of Social Networks.
CO2	Apply network concepts to generate hypotheses and inferences about social dynamics, formation of relationships, spread of information, and transfer of resources through social networks.
CO3	Critically examine literature on applications of SNA to a research domain, synthesizing diverse theoretical approaches and methodologies to identify new opportunities for innovative research.
CO4	Analyze social network data and identify possible security flaws.

Syllabus

UNIT 1
Introduction to Biological, Social, Economic and Communication Networks - Historical developments in computer science, culminating now in ubiquitous social-technological networks.
UNIT 2
Graph Theory and Evolving Social Networks: Nodes, Edges, Adjacency matrix, One and Two-Mode Networks, Node Degree). Network centrality: Betweenness, Closeness, Eigenvector centrality.(PageRank),Network.centralization. Community: Clustering, Community Structure, Modularity, Overlapping communities. Contagion, opinion formation, coordination, and cooperation: Simple contagion, Threshold models, Opinion formation, unusual applications of SNA.
UNIT 3
SNA and online social networks: Services such as Facebook, LinkedIn, Twitter, Couch Surfing, etc. Help to understand users and security risks and understand providing security solutions, Data collection from social networks(API's).

Text Books/References

Textbooks

a. *Scott J, Carrington PJ. The SAGE handbook of social network analysis. SAGE publications; 2011 May 25.*

b. *Patrick Doreian, Frans Stokman.Evolution of Social Networks, Routledge;2013.*

References

a. *De Nooy W, Mrvar A, Batagelj V. Exploratory social network analysis with Pajek: Revised and expanded edition for updated software. Cambridge University Press; 2018 Jul 19.*

b. *Easley D, Kleinberg J. Networks, crowds, and markets: Reasoning about a highly connected world. Significance;2010.*

Evaluation Policy

Sl. No.	Component	Count	Weightage
Evaluation Pattern (50:50)			
Mid Semester (30%)			
1	Mid-Term	1	30%
Continuous Assessment (20%)			
2	Quizzes	2	10%
3	Assignments	2	10%
End Semester (50%)			
4	End Sem exam	1	50%
Total			100

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