

Skills Enhancement Program -2023

Module

Social Network Analysis

Name of Department	Department of Information Technology
Module Name	Social Network Analysis
Module Coordinators	1)Dr. Vibha Tiwari 2)Dr. Priyanka Garg 3) Dr. Sunil Shukla
Module Objective	Social Network Analysis (SNA) has become a widely applied method in research and business for inquiring the web of relationships on the individual, organizational and societal level. With ready access to computing power, the popularity of social networking websites such as Facebook, and automated data collection techniques the demand for solid expertise in SNA has recently exploded. This interdisciplinary, undergraduate-level course introduces students to the basic concepts and analysis techniques in SNA. Students learn how to identify key individuals and groups in social systems, to detect and generate fundamental network structures, and to model growth and diffusion processes in networks. Students will be trained in interpreting the meaning of the aforementioned phenomena and suggesting potential courses of action to reinforce or change the observed trends The aim of this course is to demonstrate to students both theoretical rationale and important applications of network analysis methods.
Module Content	Introduction to Social Networks, challenges & issues, searching in network, homophily, link prediction, handling real-world datasets using python, industrial outlook on social network analysis, applications understanding and development.
Module Methodology	The program will start with brief of various aspects of online social networks employed in business and industrial advancement. Further, hands- on session on python is scheduled for understanding, interpretation, visualization and analysis of the real-time dataset. Up next, some real-world problems as a part of experimentation would be taken and mini applications for solving them would be produced.
Module Outcome/ Impact	<ul style="list-style-type: none"> • Understand the basics of Online Social Networks and its associated issues and impacts in society.

	<ul style="list-style-type: none">• Able to analyze real-time datasets pertaining to real world problems.• Able to design/develop social network datasets and perform industry-oriented tasks like classification and prediction, recommendation, decision making etc.• Able to figure out any loopholes in the existing system.• Writing Research Paper
Duration	4 Weeks (30 days)

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Day Wise Schedule

Week	Date	Day	Module Contents to be covered/ Interactive Session/ Assignment/ Quiz/ Exercises/ Daily practice sheets (DPP)/Tutorial/Project etc(10:00 AM onward, 4 Hrs/ Day)	Faculty
Week 1	19/05/2023	Friday	Online Social Network - Definitions & History, Challenges / issues	Dr. Priyanka Garg
	22/05/2023	Monday	Network creation(Introduction to python(installing networkx; Activity 1))	Dr. Priyanka Garg
	23/05/2023	Tuesday	Introduction to datasets/Handling real world datasets(Social Network datasets)/How to download datasets (Activity 2)	Dr. Priyanka Garg
	24/05/2023	Wednesday	Strong vs weak relationships/ Triads, clustering coefficient and Neighborhoods overlap/embeddedness/ structural holes	Dr. Priyanka Garg
	25/05/2023	Thursday	Community detection/ Homophily Tie Strength, Social Media and Passive Engagement	Dr. Priyanka Garg
	Week 2	26/05/2023	Friday	Introduction to Python
29/05/2023		Monday	Numpy Class 1	Dr. Vibha Tiwari
30/05/2023		Tuesday	Pandas Class I	Dr. Vibha Tiwari
31/05/2023		Wednesday	Pandas Class II	Dr. Vibha Tiwari
1/06/2023		Thursday	Data visualisation	Dr. Vibha Tiwari

Week 3	2/06/2023	Friday	Homophily (Continued) & Positive and Negative Relationships Positive and Negative Relationships	Dr. Sunil Shukla
	5/06/2023	Monday	Characterizing the structure of balanced networks	Dr. Sunil Shukla
	6/06/2023	Tuesday	Link Analysis	Dr. Sunil Shukla
	7/06/2023	Wednesday	Cascading Behaviour in Networks	Dr. Sunil Shukla
	8/06/2023	Thursday	Rich Get Richer Phenomenon(Introduction to Power Law)	Dr. Sunil Shukla

Week 4	9/06/2023	Friday	Project 1 Fake News Project	Dr. Sunil Shukla
			Project 2 Web Scraping Class 1 - Beautiful Soup	Dr. Vibha Tiwari
	13/06/2023	Tuesday	Project 3 Malignant Commentes Classifier - Multi Label Classification Project	Dr. Sunil Shukla
	14/06/2023	Wednesday	Project 4	Dr. Vibha Tiwari

			Web Scraping Class 2 - Selenium	
	15/06/2023	Thursday	Research Paper writing	Dr. Vibha Tiwari/Dr. Priyanka Garg/Dr. Sunil Shukla
	16/06/2023	Friday	Research Paper writing	Dr. Vibha Tiwari/Dr. Priyanka Gag/Dr. Sunil Shukla
Module	1) Dr. Vibha Tiwari vibhatiwari@mitsgwalior.in (9229430179)			
Coordinators Email Id and Mobile Number	2) Dr. Priyanka Garg priyankagarg@mitsgwalior.in 9759459403			
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