

FDP on “AI tools enabling Academic Research”

Event: 5 Days Faculty Development Program (FDP)

Date & Time: 22th March, 2024

Venue: Jagran Institute of Management-Kanpur

Resource Person: Prof. Vivek Gupta, Assistant Professor IT Department -IIM Lucknow

Participants: Faculties, Academicians, Research Scholars & Corporate Employees of various Institutes and Universities

Mode: Hybrid

Jagran Institute of Management organized five days FDP program on skilling of AI tool for research, productivity & quality. The topic for day 4 was AI tools for enabling Academic Research. AI tools play a crucial role in enabling academic research across various fields by providing advanced capabilities for data analysis, natural language processing, pattern recognition, and more.

Professor Vivek Gupta, an Assistant Professor at IIM Lucknow, expressed his insights regarding Concept Mapping, Mind Mapping, Critical Thinking, and Hot Skills. Additionally, he delved into a discussion about Bloom's Taxonomy.

AI tools that are commonly used in academic research were also discussed by him like

Machine Learning Libraries: Libraries such as TensorFlow, PyTorch, and scikit-learn are widely used for developing and implementing machine learning models. Researchers use these tools for tasks like classification, regression, clustering, and deep learning.

Natural Language Processing (NLP) Tools: NLP tools like NLTK (Natural Language Toolkit), spaCy, and Hugging Face Transformers are valuable for text analysis, sentiment analysis, named entity recognition, and language translation. These tools are particularly useful in fields like linguistics, literature analysis, and social sciences.

Data Visualization Tools: Tools like Matplotlib, Seaborn, and Plotly help researchers visualize data in various formats such as charts, graphs, and interactive plots. Effective data visualization is essential for conveying research findings and insights.

Research Collaboration Platforms: Platforms like Google Workspace (formerly G Suite), Microsoft Office 365, and collaborative tools like Overleaf for LaTeX editing facilitate real-time collaboration among researchers, allowing them to work together on documents, presentations, and data analysis.

Reference Management Software: Tools like Zotero, Mendeley, and EndNote assist researchers in managing bibliographic references, organizing research materials, and generating citations and bibliographies in various styles.

Statistical Analysis Tools: Software like R, SAS, and SPSS are widely used for statistical analysis in research studies, helping researchers analyze data, perform hypothesis testing, and draw meaningful conclusions.

AI-powered Literature Search Engines: Platforms like Semantic Scholar, Google Scholar, and PubMed utilize AI algorithms to help researchers discover relevant academic papers, patents, and scholarly articles based on specific keywords and topics.

Image and Video Analysis Tools: Tools such as OpenCV, ImageJ, and DeepDream enable researchers to analyze and process images and videos, extract features, and perform computer vision tasks such as object detection, image segmentation, and facial recognition.

Cloud Computing Platforms: Cloud platforms like Amazon Web Services (AWS), Google Cloud Platform (GCP), and Microsoft Azure provide researchers with scalable computing resources, storage, and AI services like machine learning APIs, making it easier to run complex research simulations and analyses.

AI-driven Research Assistants: AI assistants like ChatGPT, IBM Watson, and Microsoft Azure AI can assist researchers by providing information, answering questions, summarizing research papers, and generating insights based on data inputs.

These AI tools and platforms collectively empower researchers by enhancing efficiency, enabling deeper insights, and accelerating the pace of scientific discovery across various academic disciplines.

He also showed AI functionalities with the help of given below web apps:

Prof. Vivek also resolved the queries of all participants through practical approach. In last day of the event, certificates were awarded by Prof. (Dr) Divya Chowdhry Director-Jagran Institute of Management to all the participants. All participants enjoyed the FDP session and gained valuable practical knowledge on AI.

Glimpses of the Event

This meeting is being recorded. You are viewing Dr. Vivek Gupta's screen. View Options OK Leave meeting Sign in View

Education

- Ph.D. 2016 (Management)
- M.Tech. 1996 (Computer Technology)
- B. Tech. 1987 (ECE)

Work Experience

- Faculty since May. 2001 (I.T. & Systems)
- Jan. to May. 2001 Senior Project Manager
- HCL TECHNOLOGIES July 1998 - Jan. 2001 System Administrator
- OMC COMPUTERS Oct. 1987 - Mar. 1990 Customer Engineer
- Mar. 1990 - July 1998 Deputy Director

Disclaimer: The past performance is not necessarily indicative of future performance...

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Step 1 DEFINE the topic

Step 2 NARROW the topic

Step 3 GATHER background information

Step 4 CREATE a research question

Step 5 DEVELOP a working thesis statement

Step 6 FIND and evaluate sources

Step 7 CITE sources

Step 8 WRITE the paper

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Recording

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Dr.Vivek Gupta

RESEARCH PROCESS STEPS

- Identify the problem
- Evaluate the literature
- Create hypotheses
- Research Design
- Describe population
- Data collection
- Data analysis
- Report-writing

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Cmap

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Talking: Dr.Vivek Gupta

two propositions "Birds have Rapid Digestive Systems" and "Rapid Digestive Systems is necessary due to High Metabolism", among others. Therefore, understanding what concepts are is a basic step in understanding concept maps and how to construct and use them. In this document we attempt to describe what a "concept" is from a concept mapping perspective.

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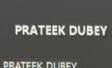

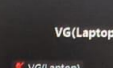

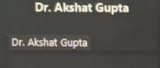
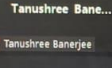

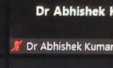
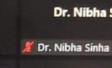
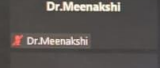
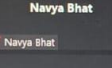

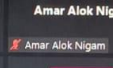
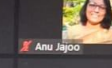
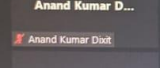
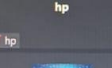
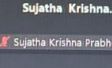
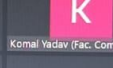
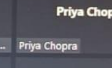
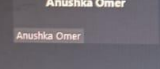

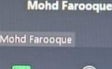
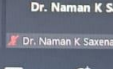

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      Birds --> Eggs
      Birds --> Sexuality
      Birds --> Endotherms
      Birds --> Rapid Digestive Systems
      Birds --> High metabolism
      Birds --> Fly
      Eggs --> Birds
      Sexuality --> Birds
      Endotherms --> Birds
      Rapid Digestive Systems --> Birds
      High metabolism --> Birds
      Fly --> Birds
      Birds --> Two Feet
      Birds --> Hollow Bones
      Birds --> Beaks
      Birds --> Two Wings
      Feathers --> Birds
      Hollow Bones --> Birds
      Beaks --> Birds
      Two Wings --> Birds
      Feathers --> Insulation
      Hollow Bones --> Light body weights
      Beaks --> Rapid Digestive Systems
      Two Wings --> Fly
      Feathers --> Insulation
      Hollow Bones --> Light body weights
      Beaks --> Rapid Digestive Systems
      Two Wings --> Fly
      Insulation --> Light body weights
      Light body weights --> Fly
      Rapid Digestive Systems --> High metabolism
      High metabolism --> Energy
      Energy --> Fly
      Endotherms --> Warm-Blooded Animals
      Warm-Blooded Animals --> Constant Body Temperature
      Warm-Blooded Animals --> Heat
      Heat --> Constant Body Temperature
      Constant Body Temperature --> Fly
      Fly --> Energy
      Fly --> Heat
      Fly --> Constant Body Temperature
  
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Figure 1. Concept map about Birds

Free Walkthrough Webinar

Recording

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 Dr. Vivek Gupta	 PRATEEK DUBEY	 JAGRAN INSTITUTE	 VG(Laptop)	 Dr. Surekha
 Dr. Akshat Gupta	 Tanushree Banerjee	 Pratima Gupta	 Dr. Abhishek Kumar	 Dr. Nibha Sinha
 Dr. Meenakshi	 Navya Bhat	 Janet Vidhi	 Amar Alok Nigam	 Anu Jajoo
 Anand Kumar Doot	 hp	 Sujatha Krishna Prabhu	 Komal Yadav (Fac. Computer ...)	 Priya Chopra
 Anushka Omer	 Ruchi Rathi	 Mohd Farooque	 Dr. Naman K Sa...	 Richa Mishra

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