



গড়গাঁও মহাবিদ্যালয়
GARGAON COLLEGE

International Workshop cum Training on Machine Learning for Data Analytics

Date: 13th to 21st March, 2021

Organized by

**Gargaon College, Assam
Department of Applied Geology, Dibrugarh University;
IEEE Student's Branch, the University of Melbourne,
IEEE Student's Branch, IIT Guwahati.**



INTERNATIONAL WORKSHOP CUM TRAINING ON MACHINE LEARNING FOR DATA ANALYTICS IWTMLDA 2021

Industry Talks | Tutorial Sessions | Python Workshops

VIRTUAL EVENT | 13-22 MARCH 2021 | FROM 5 PM IST MONDAY – FRIDAY & 10 AM IST SATURDAY & SUNDAY

1. INTRODUCTION TO DATA ANALYTICS
2. FUNDAMENTALS OF DATA HANDLING
3. DATA PREPROCESSING AND VISUALISATION
4. DATA PROCESSING AND EXPLORATION

DATA ANALYTICS MACHINE LEARNING

1. CONCEPT LEARNING AND THE GENERAL TO SPECIFIC ORDERING
2. UNSUPERVISED AND SUPERVISED LEARNING
3. DECISION TREE AND BAYESIAN LEARNING
4. ARTIFICIAL NEURAL NETWORKS (ANN)

STUDENTS | YOUNG PROFESSIONALS | WOMEN IN ENGINEERING | IEEE MEMBERS

For more information: <https://sites.google.com/view/iwtmlda-2021> | Reach us at: cbhagawati.iwtmlda2020@gmail.com



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Department of Applied Geology
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IEEE Student Branch
THE UNIVERSITY OF MELBOURNE



IEEE STUDENT BRANCH
IIT GUWAHATI



INTERNATIONAL WORKSHOP CUM TRAINING ON MACHINE LEARNING FOR DATA ANALYTICS

RESOURCE PERSONS

Dr. Pavan Harika Raavi,
Melbourne University

Mr. Sina Mansour,
Melbourne University

Dr. Sanjaykumar Patil,
Melbourne University

Mr. Ayon Borthakur,
Cornell University

Dr. Biju Kranthi
Veduruparthi,
Inventos Lab

Dr. Nandakishor Desai,
Melbourne University

Mr. Sadegh Motallebi,
Melbourne University

Dr. Geethartha Dutta,
Dibrugarh University

Mr. Phani Kumar Malladi,
IIT Kharagpur

Dr. Shashaank A. Mattur,
Philips

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Introduction

Data analytics is a frontier field which deals with the process of analyzing raw data to find trends and answer to questions. In present time, it finds enormous applications and has wide career prospects. Some examples of its applications in different fields include:

- Science: e.g. predicting trends and forecast in disaster management say in extreme flood or cyclone forecasts, exploration of mineral resources, predicting ecological response to changing climate conditions, effect of drugs on patients of different groups say different genders or age.
- Social science: e.g. predicting agricultural diversity and its changes with time, predicting cultural habits or economic conditions of different population groups,
- Commerce and marketing: e.g. finding the choice of products for different customers from their purchase history.

With the advancements in technology there is a tremendous growth of data availability in different fields of research as well as growing job opportunities. Therefore, the state of the art machine learning methods have been developed for analyzing the large data.

Rational of the Workshop

The workshop aims to give a basic understanding of the data science and application of machine learning in different fields.



Inauguration (13th March – Saturday | 10:00 AM-11:00 AM IST)

Data Analytics Sessions

1. Introduction to Data Analytics & Machine Learning:

Date: 13th March– Saturday(11:00 AM – 13:00 PM IST | 4:30 – 6:30 PM AEDT)

Speaker: Dr. Nandakishor Desai

Content: What is Data Analysis? Why use Python? Python datatypes. Helloworld! How to readinput? Comments and variables. How python executes (lineby line interpretation) -> mainfunction.

2. Fundamentals of Data Handling:

Date: 13th March– Saturday(2:00 – 4:00 PM IST | 7:30 – 9:30 PM AEDT)

Speaker: Mr. Sina Mansour L

Content: Basic python data types: int, float, string, bool. Casting. Basicoperators (+, -, *, /, //,%, **). Python data structures: Lists, tuples, sets, strings &dictionaries. Conditional statements(if, else, elif). Loops. Functions.

3. Data Pre-processing and Visualization:

Date: 14th March – Sunday (11:00 AM – 13:00 PM IST | 4:30 – 6:30 PM AEDT)

Speaker: Dr. Sanjaykumar Patil

Content: What are essential Python libraries for data processing? Process datawith NumPy andSciPy libraries. Data Visualization with Matplotlib library.

4. Data Processing and Exploration:

Date: 14th March – Sunday (2:00 – 4:00 PM IST | 7:30 – 9:30 PM AEDT)

Speaker: Dr. Sadegh Motallebi

Content: How to perform data analysis with Pandas library? Scikit-learn library for basic machine learning and statistical modelling.



Machine Learning Sessions

1. Concept Learning and Bayes Learning:

Date: 19th March – Friday (11:00 AM – 13:00 PM IST)

Speaker: Mr. Phani Kumar Malladi

Content: Concept learning task, FIND-S, Candidate elimination algorithms, Bayes Theorem, Naive Bayes classifier, Expectation maximization algorithm (along with k-means).

2. Decision Tree Learning:

Date: 19th March – Friday (2:00 – 4:00 PM IST)

Speaker: Dr. Pavan Harika Raavi and Dr. Chirantan Bhagawati

Content: Basic decision tree algorithm, issues in decision tree learning (avoid overfitting the data, measures for selecting attributes, handling training examples with missing attribute values).

3. Unsupervised and Supervised Learning

Date: 20th March – Saturday (11:00 AM – 13:00 PM IST & 2:00 – 4:00 PM IST)

Speaker: Dr. Bijju Kranthi Veduruparthi and Dr. Shashaank A. Mattur

Content: - Classification and regression models (Supervised)- Clustering (Unsupervised).

4. Artificial Neural Networks

Date: 21st March – Sunday (11:00 AM – 13:00 PM IST & 2:00 – 4:00 PM IST)



Speaker: Dr. Geetartha Dutta and Mr. Ayan Borthakur

Content: perceptrons, multilayer networks, backpropagation algorithm (and its remarks), Deep neural networks (convolutional, recurrent).



Resource Persons

INTERNATIONAL WORKSHOP ON MACHINE LEARNING AND DATA ANALYTICS

	Introduction to Data Analytics & Machine Learning: 13th March Dr. Nandakishor Desai, Post doctoral Researcher, University of Melbourne
	Fundamentals of Data Handling: 13th March Mr. Sina Mansour L, Graduate Researcher, University of Melbourne
	Data Pre-processing and Visualization: 14th March Dr. Sanjaykumar Patil, Academic Researcher, University of Melbourne
	Data Processing and Exploration: 14th March Dr. Sadegh Motallebi, Data Scientist, ANZ Melbourne

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	Concept Learning and Bayes Learning: 19th March Mr Phani Kumar Malladi, Graduate Researcher, Indian Institute of Technology Kharagpur
	Decision Tree Learning: 19th March Dr. Pavan Harika Raavi, Academic Researcher, University of Melbourne
	Unsupervised and Supervised Learning – Part I: 20th March Dr. Shashaank A. Mattur, Senior Research Engineer, Philips
	Unsupervised and Supervised Learning – Part II: 20th March Dr. Bijju Kranthi Veduruparthi, Computer Vision Lead, Invento Labs

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	Artificial Neural Networks – Part I: 21st March Dr. Geetartha Dutta, Assistant Professor, Dibrugarh University
	Artificial Neural Networks – Part II : 21st March Mr. Ayon Borthakur, Graduate Researcher, Cornell University
	Machine Learning and Data Analytics Applications: 21st March Dr. Chirantan Bhagawati, Assistant Professor, Gargaon College
	Job Prospects and Industry Options: 21st March Mr Phani Kumar Malladi, Graduate Researcher, Indian Institute of Technology Kharagpur

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List of Participants

Sl No	Name	Organization
1.	Sukanya Baruah	Dibrugarh University
2.	Sujata Goala	Gargaon College
3.	Ankika Dutta	Gargaon College
4.	Dr. Kakoli Gogoi	Indira Gandhi National Open University, New Delhi
5.	Rahul Das	Dibrugarh University
6.	Dr. Kabita Phukon	Gargaon College
7.	Abhijit Chakraborty	Gargaon College
8.	Kazleen Ahmed	Gargaon College
9.	Dr. Rinti Dutta	Lakhimpur Commerce College
10.	Monurama Phukon	Gargaon College
11.	Barasha Rani Das	Sibsagar Girls' College
12.	Bijitranjan Bezboruah	Gargaon College
13.	Niki Gogoi	Cotton University
14.	Guna Kanta Sonowal	Gargaon College
15.	Ranuj Dutta	Gargaon College
16.	Jayanta Sonowal	Department Of Physics, Gargaon College
17.	Mustafiza Nasreen	Dibrugarh University
18.	Annesha Bhatta	Dibrugarh University
19.	Dr. Pakiza Begum	Gargaon College
20.	Saheen Shehnaz Begum	Gargaon College
21.	Neha Khan	Gargaon College
22.	Swastika Borkotoky	Assam Women's University
23.	Tarpana Bhagawati	Dibrugarh University
24.	Nilutpal Chutia	Gargaon College
25.	Anil Tanti	Gargaon College
26.	Yuvaraj Gogoi	Gargaon College
27.	Tejyotpol Gogoi	Gargaon College
28.	Himashree Das	Gargaon College
29.	Dharmaraj Hazarika	Nabinchandra College, Badarpur, Karimganj
30.	Sangeeta Chetia	Gargaon College
31.	Farha Al Rosid	Gargaon College
32.	Dr. Surajit Saikia	Gargaon College
33.	Madine Hazarika	Sibsagar Girls' College

