

Sadashiv R. Puranik
Department of Mathematics
Date: 08/02/2022

To,
The Principal,
Tuljaram Chaturchand College of Arts, Science and Commerce,
Baramati.

Subject: Report of the workshop on Mathematics in Machine Learning.

Respected Sir,

We have organized six days online workshop on "Mathematics in Machine Learning" for B.Sc. and M.Sc (Mathematics) students' under the Entrepreneurship Development Cell of our college. The workshop was held from 31st January to 5th February 2022(09:00 AM to 11:00 AM). Seventy students and 5 teachers of the department of Mathematics participated in this workshop.

The resource person for the workshop was Mr. Hitesh Kapade. Senior Manager, MPS Interactive Systems. He started with the topic Introduction to Data Science and explained why it matters, what are the application of data science, what tools are used in it. The quiz and the assignment for the day were given to students. Then on the second day, he started with the introduction of Machine Learning. He discussed topics such as what are machine learning algorithms, supervised and unsupervised learning. He explained about machine learning project procedure. The topic for the third day was Basic Mathematics for Machine Learning. He explained about types of data, measures of central tendency, measures of variability. Then he showed how to use Excel in machine learning. On the fourth day, he discussed how Linear Algebra was used in the Google page rank algorithm. Calculus for machine learning and case study was taken on the fifth and last day of the workshop.

Every day students were given resources, quizzes, and assignments. The question and answers time was given to students. They interacted with the resource person and in their feedback, they told us about their satisfaction with the content and appreciated the importance of the workshop. I request you to take note of this activity.

Thank you very much for your guidance and support.

Yours faithfully





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Puranik Sadashiv R.

Department of Mathematics

Date: 15 December 2021

To,
The Principal,
Tuljaram Chaturchand College, Baramati.

Subject: Application for workshop under ED Cell

Respected sir,

We want to conduct 1 week workshop for B.Sc. (Mathematics) students on the subject 'Mathematics in Machine Learning'. Details for this workshop are as follows.

Name of the Department: Department of Mathematics

Name of the Activity: Workshop on Mathematics in Machine Learning

Type of the Activity: Experimental Learning

Coordinator of the Activity: Puranik Sadashiv Ramkrushna

Experts for the Activity: Mr. Hitesh Kapade (Senior Manager, MPS Interactive Systems)

Class: F.Y.B.Sc., S.Y.B.Sc. and T.Y.B.Sc (Mathematics) students

Expected number of students: 60

Mode of the Activity: Online (Daily 2 Hours)

Duration of the Activity: 1 week (17 January to 22 January)

Expenses for the Activity: 12,000/- (Expert Remuneration)

3500/- (Local Hospitality) 15,500

Machine learning is an attempt to construct automated machines using programming languages, data analysis, large scale computations and Mathematics. This workshop is going to concentrate on Mathematics part for Machine learning, because in computer science students learn programming, data analysis but Mathematics. I request you to give the permission for organization of the workshop under Entrepreneurship Development Cell activity.

Thank you.

Recommended to
organize
activity
18/1/2021

Yours faithfully
S Puranik



Allowed
18/1/21

Department of Mathematics

Workshop on 'Mathematics in Machine Learning' organized under ED Cell

(31st January-5th February 2022)

Expenses for the Workshop

Sr. No.	Name	Bank Name	Branch	IFSC code	Account No.	Amount
Expert Remuneration (for 6 days)						
1	Kapade Hitesh Ramesh	Axis Bank	S. B. Road, Pune	UTIB0000315	315010100160063	12,000/-
Honorarium +Certificate Distribution						
2	Sadashiv R. Puranik	Bank of Maharashtra	Baramati	MAHB0000073	60015113228	3500/-
Honorarium=3000 (500 x 6) and Certificate Distribution =500						
Total						15,500/-

Dr. K. R. Puranik
Coordinator
ED Cell

S. Puranik
Head
Department of Mathematics



meet.google.com/abu-pjag-jlm?title=1&authuser=0

REC hitash kapade is presenting

What data scientist do?

A data scientist needs to be somebody who knows how to find answers to novel problems.

The most basic of definitions would be that a data scientist is somebody who uses data to answer questions. But more importantly to you, what skills does a data scientist embody?

The diagram is a Venn diagram with four overlapping circles. The top circle is labeled 'DOMAIN EXPERTISE'. The bottom-left circle is labeled 'MATHEMATICS'. The bottom-right circle is labeled 'COMPUTER SCIENCE'. The intersection of the top and bottom-left circles is labeled 'STATISTICAL RESEARCH'. The intersection of the top and bottom-right circles is labeled 'DATA PROCESSING'. The intersection of the bottom-left and bottom-right circles is labeled 'MACHINE LEARNING'. The central intersection of all four circles is labeled 'DATA SCIENCE'.

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09:46 | Workshop on Mathematics in Machine Learning

19°C Haze

09:46 AM 11.01.2022



meet.google.com/vmc-yccc-nov?ipil=1&authuser=0

REC hitash kapade is presenting

Applications of Integrals

ROC - Area under ROC

The graph shows a True Positive Rate (tpr) on the y-axis and a False Positive Rate (fpr) on the x-axis, both ranging from 0.0 to 1.0. A solid line represents the ROC curve, which starts at (0,0) and rises steeply to a tpr of approximately 0.9 at an fpr of 0.1, then continues to rise more gradually towards (1,1). A dashed diagonal line from (0,0) to (1,1) represents a random classifier. A small box at the bottom of the graph contains the text: 'Figure 4: ROC curve corresponding to the logistic model.'

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10:17 | Mathematics in Machine Learning Lecture 5

20°C Mostly sunny

10:17 AM 04-02-2022



Anekant Education Society's
Tuljaram Chaturchand College of Art's, Science and Commerce
Baramati-413102 (MS) India
(Autonomous)

Department of Mathematics
Organizes
Workshop on Mathematics in Machine Learning

31 January to 5 February 2022
Time: 09:00 AM to 11:00 AM

Resource Person
Mr. Hitesh Kapade
Senior Manager
MPS Interactive Systems

Registration Link: <https://forms.gle/fjvpmU1m5Laq72V77>
Join Telegram Group: <https://t.me/+kMVR8trrkR11Yjg1>

Prof. S. R. Puranik
Coordinator
Head, Department of Mathematics

Dr. V. C. Kakade
Chairman
Entrepreneurship Development Cell

Dr. C. V. Murumkar
Principal

Organizing Committee:

Prof. V. H. Shinde, Prof. P. B. Fulari, Prof. S. S. Jadhav, Prof. N. R. Shinde,
Prof. S. V. Kate, Prof. R. T. Kadam, Prof. V. S. Kshirsagar



Workshop on Mathematics in Machine Learning

(31 January to 5 February 2022)

Attendance: Monday, 31 January 2022

* Meeting code: ahu-pixg-jtm

Name of the Student	Name of the Student
1314 Shruti Jain	Rutuja Gaikwad
ADITYA DEOKAR	Rutuja Kangude
Abhijeet Gawade	Rutuja Kokare
Aditya Magar	Ruturaj Khandagale
Aishwarya Giranje	SANYOGITA SAPKAL
Aniket Bhand	SURAJ GHANWAT
Ankita Navale	Sadashiv Puranik
Ashwini jadhav	Sakina Lakdawala
Bharat Jambhulkar	Sakshi Adling
Chaitrali Takale	Sakshi Baride
Darshani Chavan	Samiksha Tupe
Dhanaraj Wanave	Saurabh Kondhalkar
Dhanashree Hole	Sharwari Markale
Dipti Salunkhe	Shivanjali Misal
Dnyaneshwari Darekar	Shraddha Kadale
Dnyaneshwari Jadhav	Shruti dhalpe
Dnyaneshwari Phadtare	Shubham Jadhav
Dnyaneshwari Rajebhosale	Shweta Nikam
GOKUL BHAND	Sneha Hivarkar
Ganesh Kendre	Snehal Magdum
Jayashri Ranaware	Sonali Kate
Jyoti Sinha	Srushti Pawar
Kajal Raut	Sujaan Mulani
Komal Nanavare	Sukanya Ghadage
Mayuri Suryavanshi	Vaibhav Ghongane
Megha Nalawade	Vaishnavi Lavate
Monali Madane	Vishakha Kshirsagar
Navanath Avate	akanksha agam
Nikita Babar	girish Jadhav
Nikita Shinde	hitesh kapade
Nikita Vyavahare	neha owal
Nisha Hole	pooja Parkale
Nutan Lavhe	pragati wable
Pragati Kadam	priyanka jadhav
Prajakta Darekar	rupali kadam
Pranali Jadhav	sai Rajebhosale
Prathmesh Hajbe	sampada chavan
Pratik Dhumal	shriraj saste
Pratiksha Jagdhane	sunanda zargad
Pratiksha Mhaske	utkarsha prabhune
Priyanka Gawali	
Rahul More	
Rushikesh Shinde	



Workshop on Mathematics in Machine Learning

(31 January to 5 February 2022)

Attendance: Tuesday, 01 February 2022

* Meeting code: vtf-bgmn-kfi

Name of the student	Name of the student
Abhijeet Gawade	SANYOGITA SAPKAL
Aishwarya Giranje	SURAJ GHANWAT
Aniket Bhand	Sadashiv Puranik
Aniket Bondre	Sakshi Adling
Ankita Navale	Samiksha Tupe
Ashwini jadhav	Saurabh Kondhalkar
Bhakti Duche	Sharwari Markale
Bharat Jambhulkar	Shivanjali Misal
Chaitrali Takale	Shiwanjali Jadhav
Darshani Chavan	Shraddha Kadale
Dhanaraj Wanave	Shruti dhalpe
Dhanashree Hole	Shubham Jadhav
Dipti Salunkhe	Shweta Nikam
Dnyaneshwari Jadhav	Sneha Hivarkar
Dnyaneshwari Phadtare	Snehal Magdum
Dnyaneshwari Rajebhosale	Snehal Shinde
Jayashri Ranaware	Sonali Kate
Jyoti Sinha	Sujaan Mulani
Komal Nanavare	Sukanya Ghadage
Mayuri Suryavanshi	Swapnil Pansare
Megha Nalawade	Vaibhav Ghongane
Navanath Avate	Vaishnavi Lavate
Neha Chavare	Vishakha Kshirsagar
Nikita Babar	akanksha agam
Nikita Shinde	hitesh kapade
Nikita Vyavahare	neha owal
Nisha Hole	pragati wable
Nutan Lavhe	pratik more
Pragati Kadam	pratiksha shinde
Prajakta Darekar	pratima bhapkar
Prajwal Nimbalkar	priyanka jadhav
Pranali Jadhav	rupali kadam
Prapti Mane	sai Rajebhosale
Pratiksha Jagdhane	sampada chavan
Pratiksha Mhaske	sunanda zargad
Pratima Bandgar	vrushali pawar
Priyanka Gawali	
Priyanka Kakade	
RESHMA JADHAV	
Rahul More	
Rupali Magade	
Rushikesh Shinde	
Rutuja Gaikwad	
Rutuja Kokare	



Workshop on Mathematics in Machine Learning

(31 January to 5 February 2022)

Attendance: Wednesday, 02 February 2022

* Meeting code: fxn-eswt-ujc

Name of the student	Name of the student
ADITYA DEOKAR	Sharwari Markale
Abhijeet Gawade	Shivanjali Misal
Aniket Bhand	Shraddha Kadale
Ankita Navale	Sneha Hivarkar
Ashwini jadhav	Sonali Kate
Bhakti Duche	Srushti Pawar
Bharat Jambhulkar	Sujaan Mulani
Chaitrali Takale	Sukanya Ghadage
Darshani Chavan	Swapnil Pansare
Dhanaraj Wanave	Tejas Pawar
Dhanashree Hole	Vishakha Kshirsagar
Dipti Salunkhe	ashwini shedage
Dnyaneshwari Jadhav	hitesh kapade
Dnyaneshwari Rajebhosale	neha owal
Gulfishanaaz Shaikh	pooja Parkale
Jayashri Ranaware	pragati wable
Komal Nanavare	pratima bhapkar
Mayuri Suryavanshi	priyanka jadhav
NIKITA BABAR	sampada chavan
Navanath Avate	sunanda zargad
Neha Chavare	tasneem bagwan
Nikita Babar	utkarsha prabhune
Nikita Shinde	vanita malshikare
Nikita Vyavahare	vrushali pawar
Nutan Lavhe	
Pragati Kadam	
Prajakta Darekar	
Pranali Jadhav	
Pratiksha Mhaske	
Pratiksha More	
Pratima Bandgar	
Priyanka Gawali	
RESHMA JADHAV	
Rupali Magade	
Rushikesh Shinde	
Rutuja Kangude	
Rutuja Kokare	
SANYOGITA SAPKAL	
SURAJ GHANWAT	
Sadashiv Puranik	
Sakshi Adling	
Saurabh Kondhalkar	



Workshop on Mathematics in Machine Learning

(31 January to 5 February 2022)

Attendance: Thursday , 03 February 2022

* Meeting code: mod-qmoq-uby

Name of the student	Name of the student
ASHWINI WANAVE	Rutuja Bharane
Akash shinde	Rutuja Gaikwad
Aniket Bhand	Rutuja Kokare
Ankita Navale	Rutuja Suryavanshi
Apeksha Kale	SANYOGITA SAPKAL
Arti Dalvi	SURAJ GHANWAT
Ashwini jadhav	Sadashiv Puranik
Bhakti Duche	Sakshi Adling
Bharat Jambhulkar	Saurabh Kondhalkar
Chaitrali Takale	Shaila Jadhav
Darshani Chavan	Sharwari Markale
Datta Jadhav	Shivanjali Misal
Dhanaraj Wanave	Shraddha Kadale
Dhanashree Hole	Shruti Kikale
Dipti Salunkhe	Shubham Jadhav
Dnyaneshwari Jadhav	Sneha Hivarkar
Dnyaneshwari Rajebhosale	Snehal Magdum
Gulfishanaaz Shaikh	Sonali Kate
Jayashri Ranaware	Sonali Shinde
Jaydeep Gadadare	Srushti Pawar
Komal Nanavare	Sujaan Mulani
Komal Sawant	Sukanya Ghadage
Mansi Sonawane	Susmita Kakade
Mayuri Suryavanshi	Swapnil Pansare
Monu Jagtap	Swati Deshmane
Navanath Avate	Trupti Kadam
Neha Chavare	Vinay Zende
Nikita Babar	Vishakha Kshirsagar
Nikita Shinde	akanksha agam
Nutan Lavhe	ashwini shedage
Omkar Gawali	bharati Sangale
Pragati Kadam	chandravijay tripathi
Pranali Jadhav	dattatray shewale
Pranali Rupanavar	harshada kutwal
Pratik Dhumal	hitesh kapade
Pratik Wagh	mayuri kale
Pratiksha Jagdhane	neha owal
Pratiksha Kurumkar	pragati wable
Pratiksha Mhaske	pratima bhapkar
Priyanka Gawali	priyanka jadhav
Rahul More	sampada chavan
Rohit Ghadge	saurabh Kokare
Rupali Jaypatre	sunanda zargad
Rupali Magade	tasneem bagwan
vrushali pawar	vanita malshikare



Workshop on Mathematics In Machine Learning

(31 January to 5 February 2022)

Attendance: Friday, 04 February 2022

* Meeting code: vnc-ycxx-nov

Name of the student	Name of the student
ASHWINI KOKARE	Sharwari Markale
ASHWINI WANAVE	Shivanjali Misal
Amruta Sarak	Shraddha Kadale
Aniket Bhand	Shruti Kikale
Ankita Navale	Shruti dhalpe
Apeksha Kale	Shubham Jadhav
Arti Dalvi	Shubhangi Gujar
Ashwini Jadhav	Sneha Yadav
Bhakti Duche	Snehal Magdum
Bharat Jambhulkar	Sonali Shinde
Chaitrali Takale	Srushti Pawar
Darshani Chavan	Sujaan Mulani
Dhanashree Hole	Sukanya Ghadage
Dipti Salunkhe	Swapnil Pansare
Ganesh Kendre	Swati Deshmane
Gulfishanaaz Shaikh	Vinay Zende
Jayashri Ranaware	Vishakha Kshirsagar
Jaydeep Gadadare	akanksha agam
Komal Nanavare	ashwini shedage
Komal Sawant	bharati Sangale
NIKITA DHAIGUDE	chandravijay tripathi
Navanath Avate	dattatray shewale
Nikita Babar	harshada kutwal
Nikita Shinde	hitesh kapade
Nikita Vyavahare	mayuri kale
Nutan Lavhe	neha owal
Omkar Gawali	pooja Parkale
Pooja Kokane	pragati wable
Pragati Kadam	pratima bhapkar
Pranali Jadhav	priyanka jadhav
Pratik Dhumal	sai Rajebhosale
Pratiksha Jagdhane	sampada chavan
Pratiksha Kurumkar	sunanda zargad
Pratiksha Mhaske	supriya pomane
Pratiksha More	vaishnavi Dalvi
Pratima Bandgar	vedpathak sonali
Priya Bhosale	vrushali pawar
Priyanka Gawali	
Rohit Ghadge	
Rutuja Gaikwad	
SANYOGITA SAPKAL	
SRUSHTI GHADAGE	
SURAJ GHANWAT	
Sadashiv Puranik	



Workshop on Mathematics in Machine Learning

(31 January to 5 February 2022)

Attendance: Saturday, 05 February 2022

* Meeting code: ooi-fuwk-hdn

Name of the student	Name of the student
ASHWINI KOKARE	Sujaan Mulani
ASHWINI WANAVE	Sukanya Ghadage
Aniket Bhand	Swapnil Pansare
Ankita Navale	Vishakha Kshirsagar
Apeksha Kale	akanksha agam
Arti Dalvi	bharati Sangale
Bharat Jambhulkar	dipali adat
Chaitrali Takale	harshada kutwal
Darshani Chavan	hitesh kapade
Dhanashree Hole	mayuri khomane
Dipti Salunkhe	neha owal
Gulfishanaaz Shaikh	pooja Parkale
Jayashri Ranaware	pragati wable
Jaydeep Gadadare	pratima bhapkar
Mayuri Suryavanshi	priyanka jadhav
NIKITA DHAIGUDE	sai Rajebhosale
Navanath Avate	sampada chavan
Nikita Babar	snehal salunke
Nikita Shinde	sunanda zargad
Nutan Lavhe	supriya pomane
Omkar Gawali	tasneem bagwan
Prajakta Darekar	vanita malshikare
Pranali Gadave	vrushali pawar
Pranali Jadhav	
Pratik Dhumal	
Pratiksha Jagdhane	
Pratiksha Kurumkar	
Pratiksha Mhaske	
Pratiksha More	
Pratima Bandgar	
Priyanka Gawali	
SANYOGITA SAPKAL	
SRUSHTI GHADAGE	
SURAJ GHANWAT	
Sadashiv Puranik	
Sanskruiti pawar	
Sharwari Markale	
Shivanjali Misal	
Shiwanjali Jadhav	
Shruti Kikale	
Shubhangi Gujar	
Sneha Yadav	
Snehal Magdum	
Srushti Pawar	





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॥ सिद्धिरनेकान्तात् ॥

Anekant Education Society's

TULJARAM CHATURCHAND COLLEGE
of Arts, Science and Commerce, Baramati, 413102
(Autonomous Institute)

Estd-June 1962

Religious Minority Institute

NAAC Reaccredited 'A+', CGPA 3.55

● ISO - 9001 - 2015 Certified

● Green Audit Certified

● Best College Awardee-SPPU

● DST FIST 'O' Level

● UGC - CPE Status

● Best Principal Awardee-SPPU

● DBT - Star College Scheme

● UGC - B. Voc. Programme

Affiliated to Savitribai Phule Pune University (Formerly University of Pune) (Id No.PU/PN/ASC/016/1962) Univ. College Code No. 032, HSC Board Code No.J 11.02.001(1976-77)

Ref. No. AES/TCC/ Gen. 591

Date **8 FEB 2022**

To,
Mr. Hitesh Kapade
Senior Manager,
MPS Interactive Systems


Subject: Letter of Appreciation.

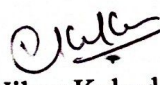
Dear Sir,


Thank you very much for delivering an informative and thought-provoking training as a Resource Person for the 6 days' workshop on "Mathematics in Machine Learning" held during the period 31st January to 5 February 2022. It was a splendid presentation that exposed students to use Mathematics in technology and how one can choose a different and successful career by studying Mathematics with technology especially in the field of Machine Learning. All the students appreciated and benefited from these technical discussions in the workshop.

Looking forward to your cooperation for the promotion of professional education in the future as well.

Yours sincerely,


Sadashiv Puranik
Head
Department of Mathematics


Dr. Vikas Kakade
Chairman
ED Cell


Dr. Chandrashekhar Murumkar
Principal

