Event Report

on

Three Days Workshop on "Learning AI using MATLAB"

07th – 09th June, 2021

Organized By: -

Madhuben & Bhanubhai Patel Institute of Technology

(A Constituent College of CVM University), New Vallabh Vidyanagar

PROGRAMME SCHEDULE

DAY – 1 (07 June ,2021)	
TIME	**SESSION**
10:00 AM - 10:30 AM	**Inauguration**
10:30 AM - 12:00 Noon	**Session – 1** **Mr. Dhiraj Jagtap** (Application Engineer MathWorks (MATLAB), DesignTech Systems, Pvt. Ltd., Ahmedabad) **Topic:** Working with the MATLAB User Interface, working with MATLAB Variables and Expressions, Writing Script Files, Live Editor, working with advanced plotting, Data Import and Export and fitting, Data Analysis, How to create GUI (MATLAB app designer tool)

DAY – 2 (08 June, 2021)	
TIME	**SESSION**
10:30 AM - 12:00 Noon	**Session – 1** **Mr. Dhiraj Jagtap** (Application Engineer MathWorks (MATLAB), DesignTech Systems, Pvt. Ltd., Ahmedabad) **Topic:** What is AI & How it's Done? Applications of Machine Learning, What is Machine Learning? Types of Machine Learning: Supervised, Unsupervised. Machine Learning Workflow. **Demo:** Train a model to predict Diabetes

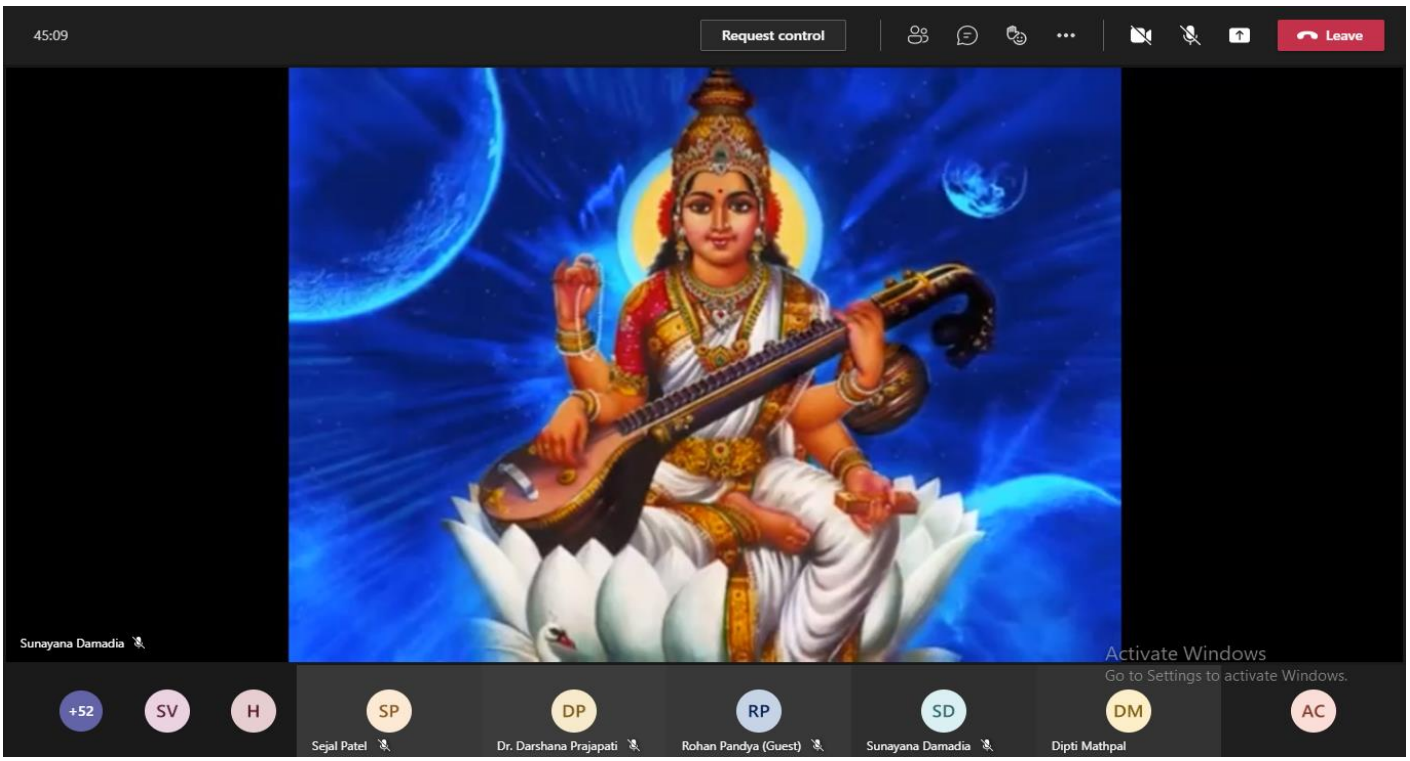
DAY – 3 (09 June, 2021)	
TIME	**SESSION**
10:30 AM - 12:00 Noon	**Session – 1** **Mr. Dhiraj Jagtap** (Application Engineer MathWorks (MATLAB), DesignTech Systems, Pvt. Ltd., Ahmedabad) **Topic:** **What is Deep learning? Applications of Deep Learning, what are different apps available in MATLAB? CNN Based Classification of Images.** **Demo: Transfer Learning using Deep Network Designer**

The aim of this Workshop is to explain the use of Artificial Intelligence technology and making attendees aware about development of various applications using it. The Workshop was conducted through MS Team as an online platform. As these topics are the demand for today's industry and society, there is a need to explore the research opportunities in the field of automation. This Workshop will provide a unique platform for enhancing the knowledge of the faculty members and students who are doing research or planning to do research in the mentioned area.

DAY – 1: (07 June,2021)

Inaugural Ceremony was on 07 June,2021 at 10:00AM.

Inauguration commenced with Welcome Note by **Prof. Dipti Mathpal**. She warmly welcomed the dignitaries and participants. Then blessings of God were taken by playing Saraswati Vandana by Prof. Sunayana Domadia.

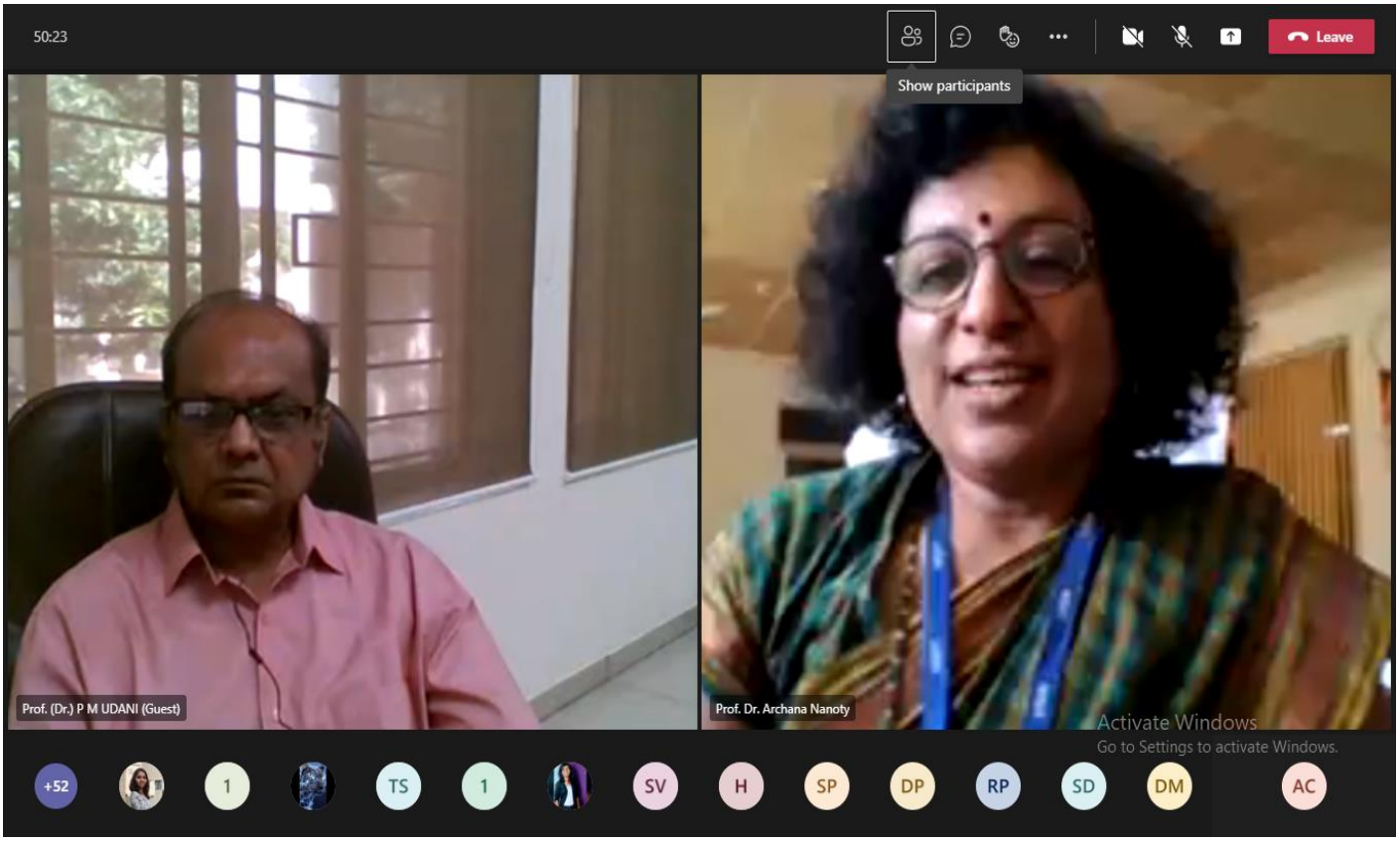


In the beginning of the function, the Honorable Chairman of CVM, and President of CVM University, **Er. Shri Bhikhubhai Patel sir** motivated us with his blessings and encouraging words.

After that **Prof. Dr.Archana Nanoty**, Principal, MBIT, gave a brief introduction about how technology has helped us during this pandemic time. She welcomed all the participants of the workshop. She also talked about the importance of Artificial Intelligence and MATLAB. She ended her speech by wishing participants that the workshop will be helpful to them.

After Principal Madam's Speech, **Dr. P M Udani** Director General of CVM University, addressed the participants and shared his views about the importance of this workshop. He discussed about importance of latest technological development considering the present time of COVID-19 pandemic. He also discussed how Information Technology has helped us during this pandemic time.

After that **Prof. Sunayana Domadia,** Assistant Prof., IT Dept., MBIT proposed vote of thanks. She appreciates to all team members who involved organizing this workshop.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Prof. (Dr.) P M UDANI (Guest)
Prof. Dr. Archana Nanoty
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Workshop on Learning AI using MATLAB
01:03:43
Dipti Mathpal
Tapan Patel
Hitesh Thakwani
Nizavraja
Jayna Donga
Nisarg Vegad
Mayur Ayar
Ankita Chauhan
Shital Gondaliya
Jay Raval
Tushar Shah
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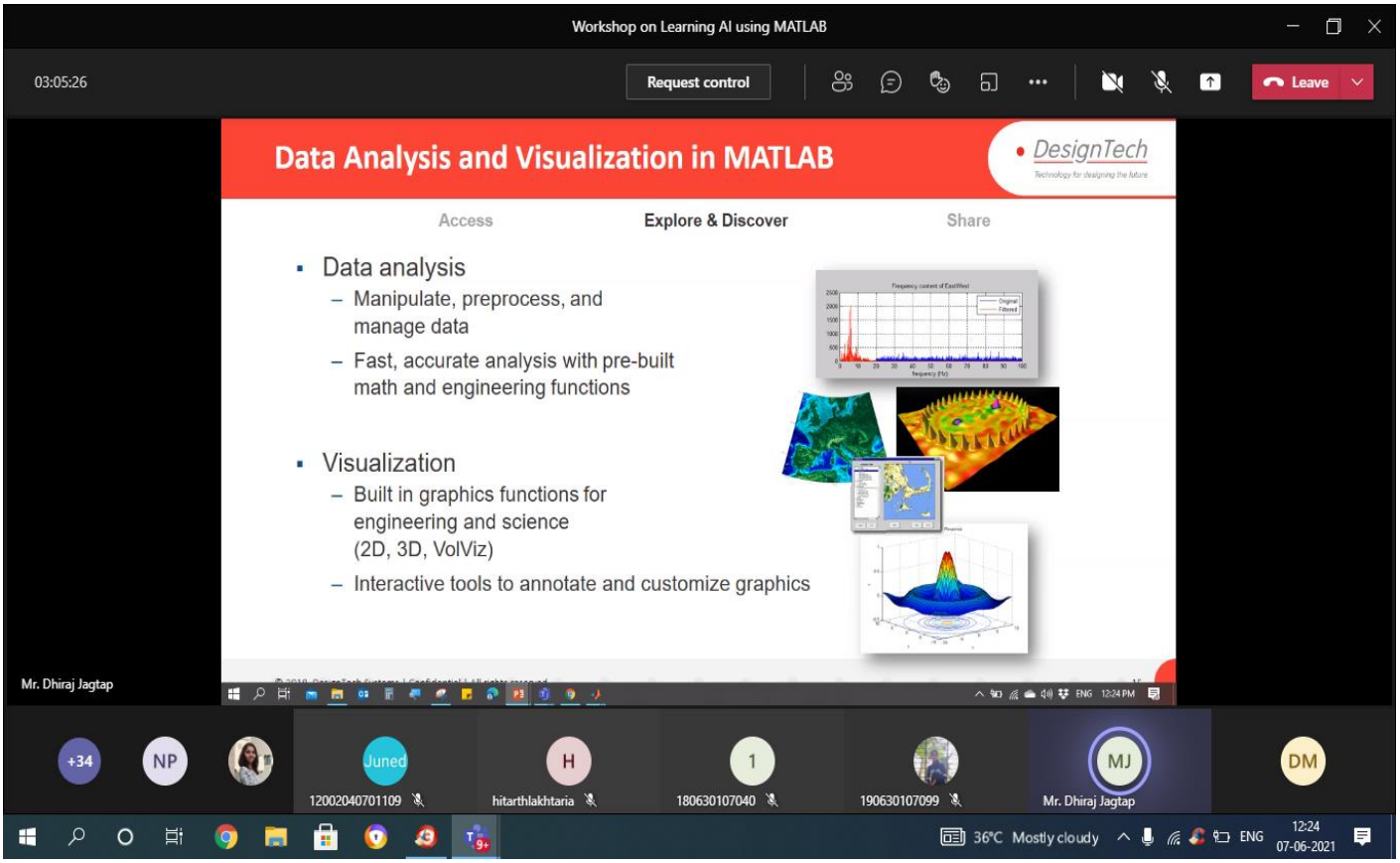
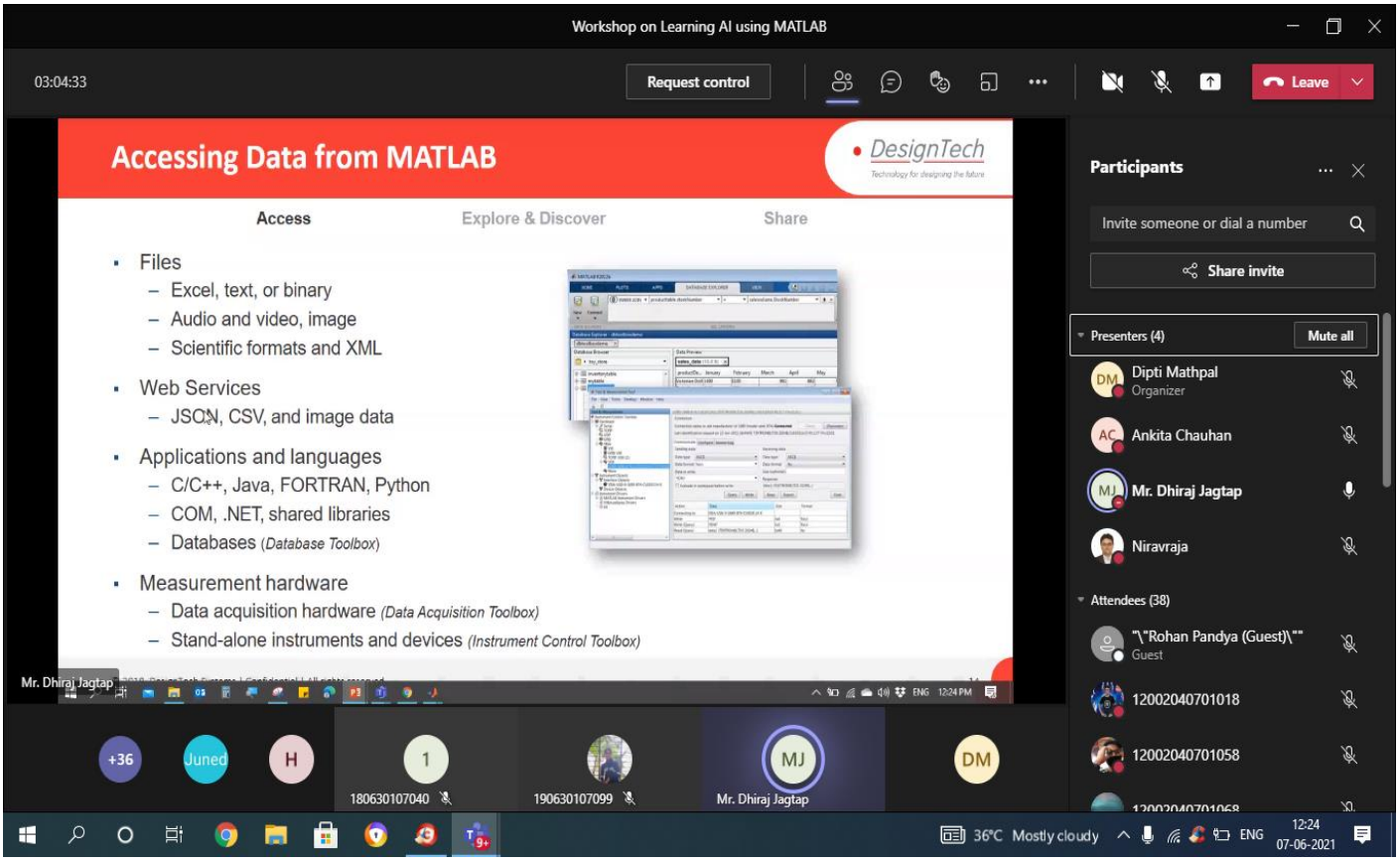
P
Prof. (Dr.) P M UDANI (Gu...
SD
Sunayana Damadia

DAY – 1: Session – 1 (07, June, 2021)

Mr. Dhiraj Jagtap (Application Engineer MathWorks (MATLAB), DesignTech Systems, Pvt. Ltd., Ahmedabad) conducted session on **07, June, 2021** during 10:30 AM to 12:00 Noon. He delivered a talk on Working with the MATLAB User Interface, working with MATLAB Variables and Expressions, Writing Script Files, Live Editor, working with advanced plotting, Data Import and Export and fitting, Data Analysis, how to create GUI (MATLAB app designer tool)

He nicely explained about Artificial Intelligence introduction and its application. He enlightens the session by explaining about Artificial Intelligence as this field has become a fundamental discipline, both in the area of basic research and in the resolution of applied problems, where statistics and computer science intersect. Thus, from the perspective of the data, machine learning, operation research, methods and algorithms, and data mining techniques are aligned to address new challenges characterized by the complexity, volume and heterogeneous nature of data.




Workshop on Learning AI using MATLAB
03:04:33
Request control
Leave
Accessing Data from MATLAB
DesignTech
Access
Explore & Discover
Share
Files
Excel, text, or binary
Audio and video, image
Scientific formats and XML
Web Services
JSON, CSV, and image data
Applications and languages
C/C++, Java, FORTRAN, Python
COM, .NET, shared libraries
Databases (Database Toolbox)
Measurement hardware
Data acquisition hardware (Data Acquisition Toolbox)
Stand-alone instruments and devices (Instrument Control Toolbox)
Participants
Invite someone or dial a number
Share invite
Presenters (4)
Mute all
Dipti Mathpal
Organizer
Ankita Chauhan
Mr. Dhiraj Jagtap
Niravraja
Attendees (38)
"\"Rohan Pandya (Guest)\""
Guest
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Mr. Dhiraj Jagtap
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Mr. Dhiraj Jagtap
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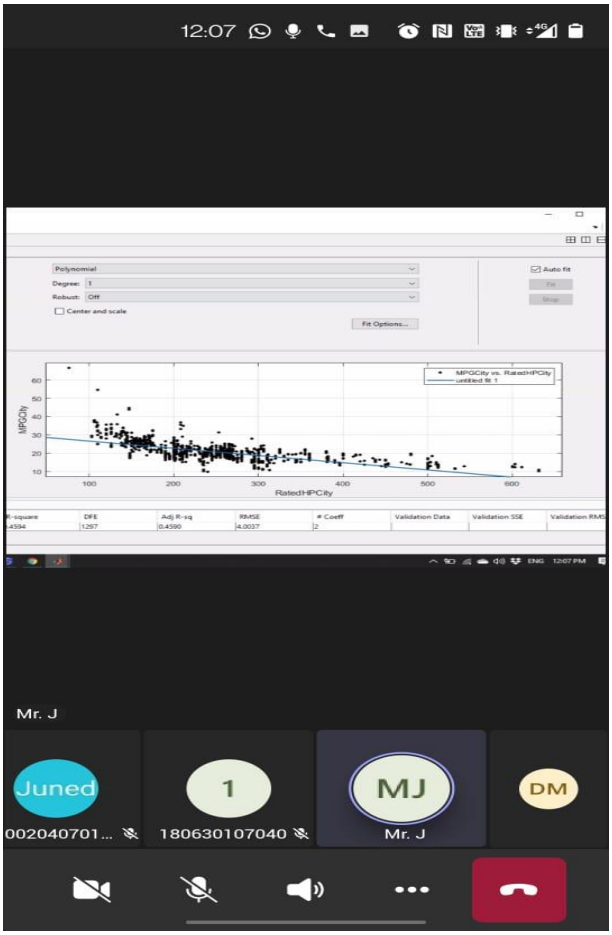
07-06-2021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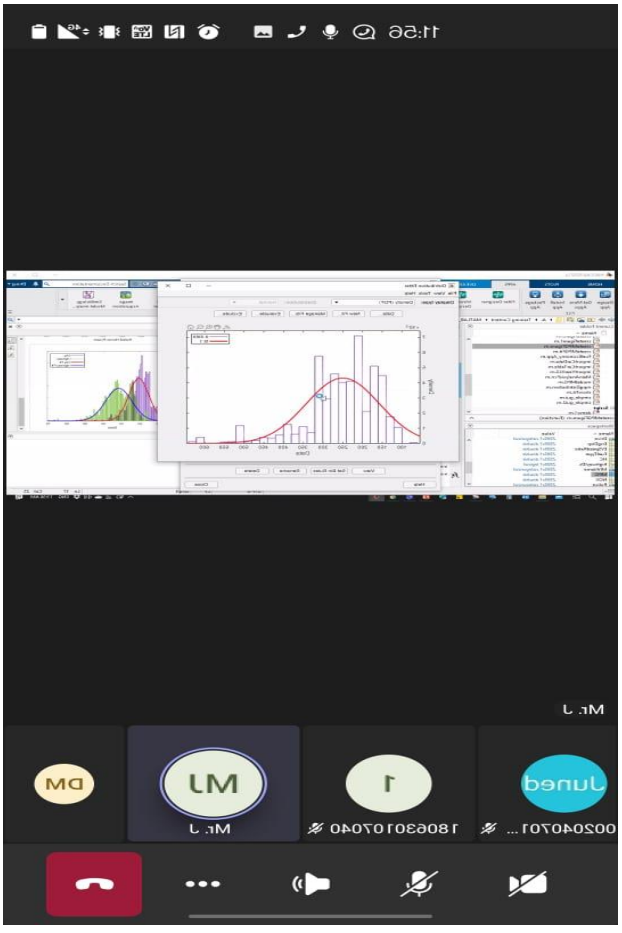
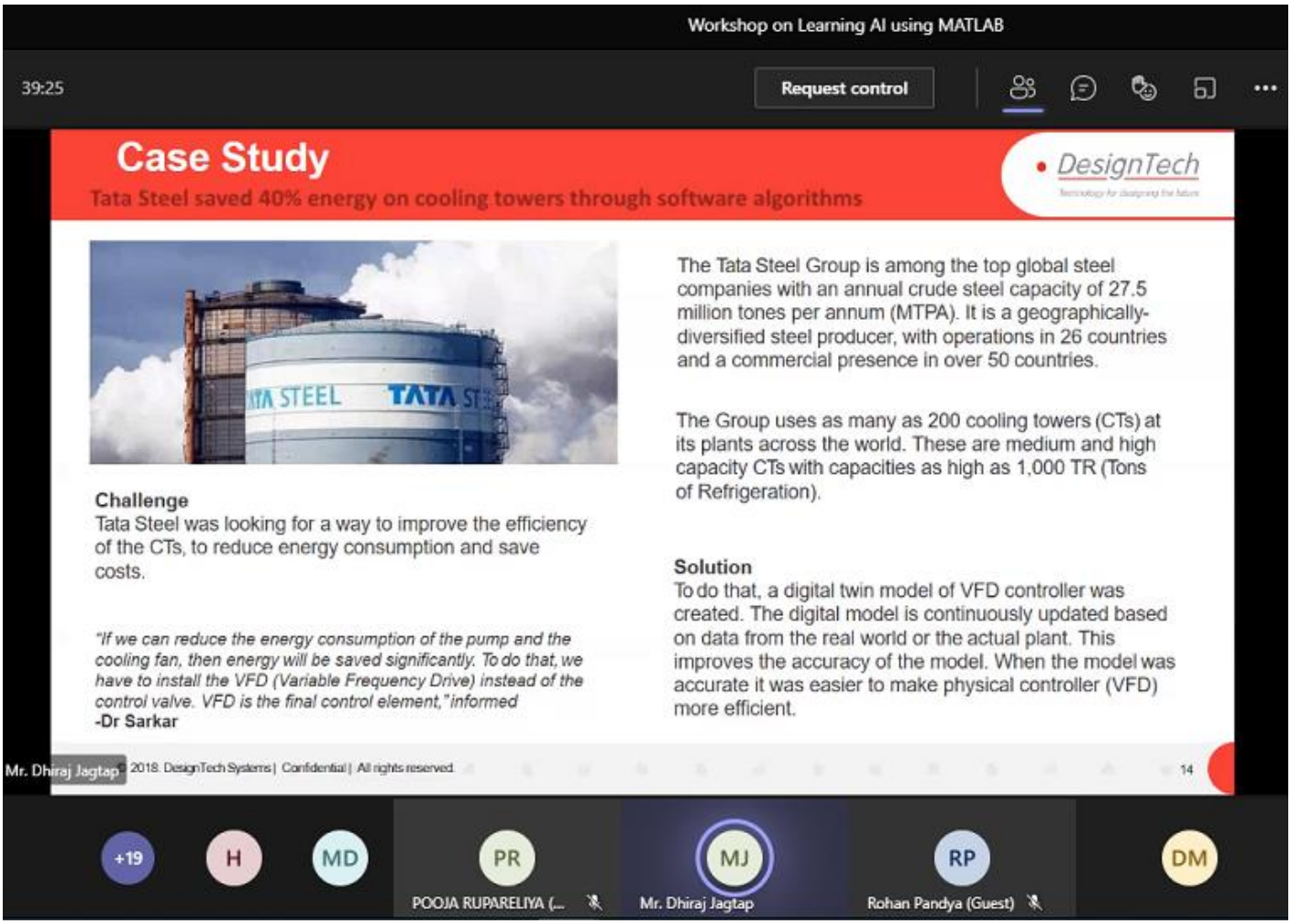

Mr. J

DAY – 2: Session – 1 (8 June, 2021)

Mr. Dhiraj Jagtap (Application Engineer MathWorks (MATLAB), DesignTech Systems, Pvt. Ltd., Ahmedabad) conducted session on **08, June, 2021** during 10:30 AM to 12:00 Noon. He delivered a talk on What is AI & How it's Done? Applications of Machine Learning,
What is Machine Learning? Types of Machine Learning: Supervised, Unsupervised. Machine Learning Workflow. **Demo:** Train a model to predict Diabetes

Machine learning is a hot topic in research and industry, with new methodologies developed all the time. The speed and complexity of the field makes keeping up with new techniques difficult even for experts — and potentially overwhelming for beginners. Session was executed by Different techniques of Machine learning like supervised learning, unsupervised learning, and reinforcement with quite good examples.



Workshop on Learning AI using MATLAB

40:31

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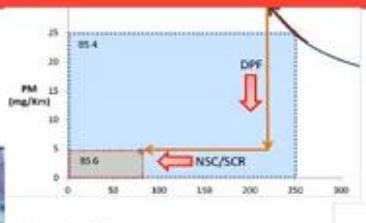
Other case Studies

DesignTech



AUTOMOTIVE

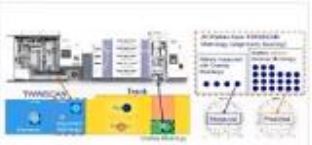
BMW

Detecting Oversteering with Machine Learning

AUTOMOTIVE

Honda

Fleet Analytics to build strategies for BS VI Development



AUTOMOTIVE

Mercedes Benz & Dr. Turck

Predictive Maintenance using MATLAB - Pattern Recognition for Time Series Data

SEMICONDUCTORS

ASML

Virtual Metrology Technology for Semiconductor Manufacturing with Machine Learning

https://www.mathworks.com/solutions/machine-learning/customer-success.html

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+20 H MD PR POOJA RUPARELIYA (... MJ Mr. Dhiraj Jagtap ... RP Rohan Pandya (Guest) DM

Workshop on Learning AI using MATLAB

40:42

Request control

More Data, More Questions, Better Answers

DesignTech

Machine learning algorithms find natural patterns in data that generate insight and help you to make better decisions and predictions. They are used every day to make critical decisions in medical diagnosis, stock trading, energy load forecasting, and more. Media sites rely on machine learning to sift through millions of options to give you song or movie recommendations. Retailers use it to gain insight into their customers' purchasing behavior.

Real World Applications

With the rise in big data, machine learning has become particularly important for solving problems in areas like these:

- Computational finance, for credit scoring and algorithmic trading
- Image processing and computer vision, for face recognition, motion detection, and object detection
- Computational biology, for tumor detection, drug discovery, and DNA sequencing
- Energy production, for price and load forecasting
- Automotive, aerospace, and manufacturing, for predictive maintenance
- Natural language processing

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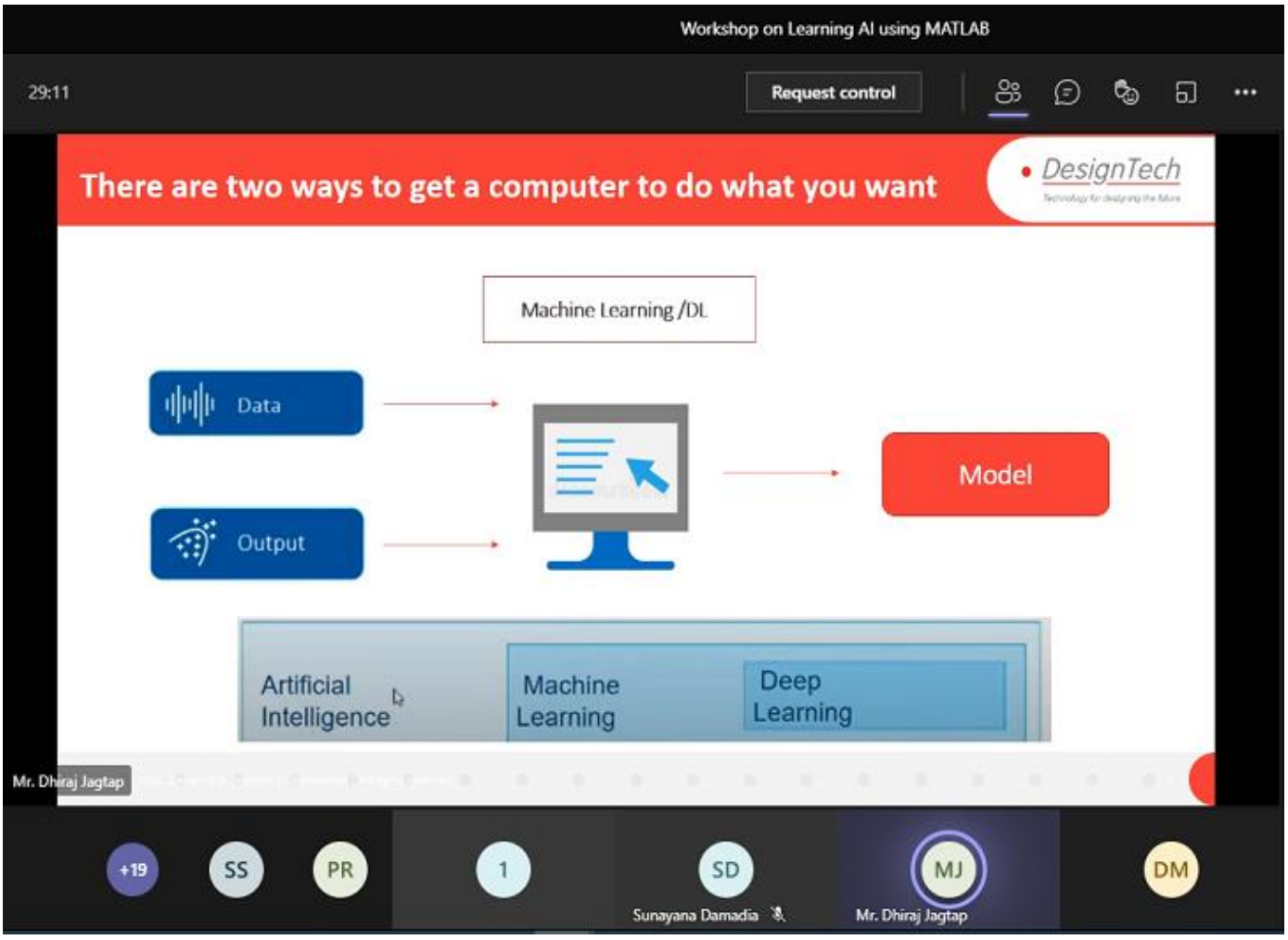
+20 H MD PR POOJA RUPARELIYA (... MJ Mr. Dhiraj Jagtap ... RP Rohan Pandya (Guest) DM

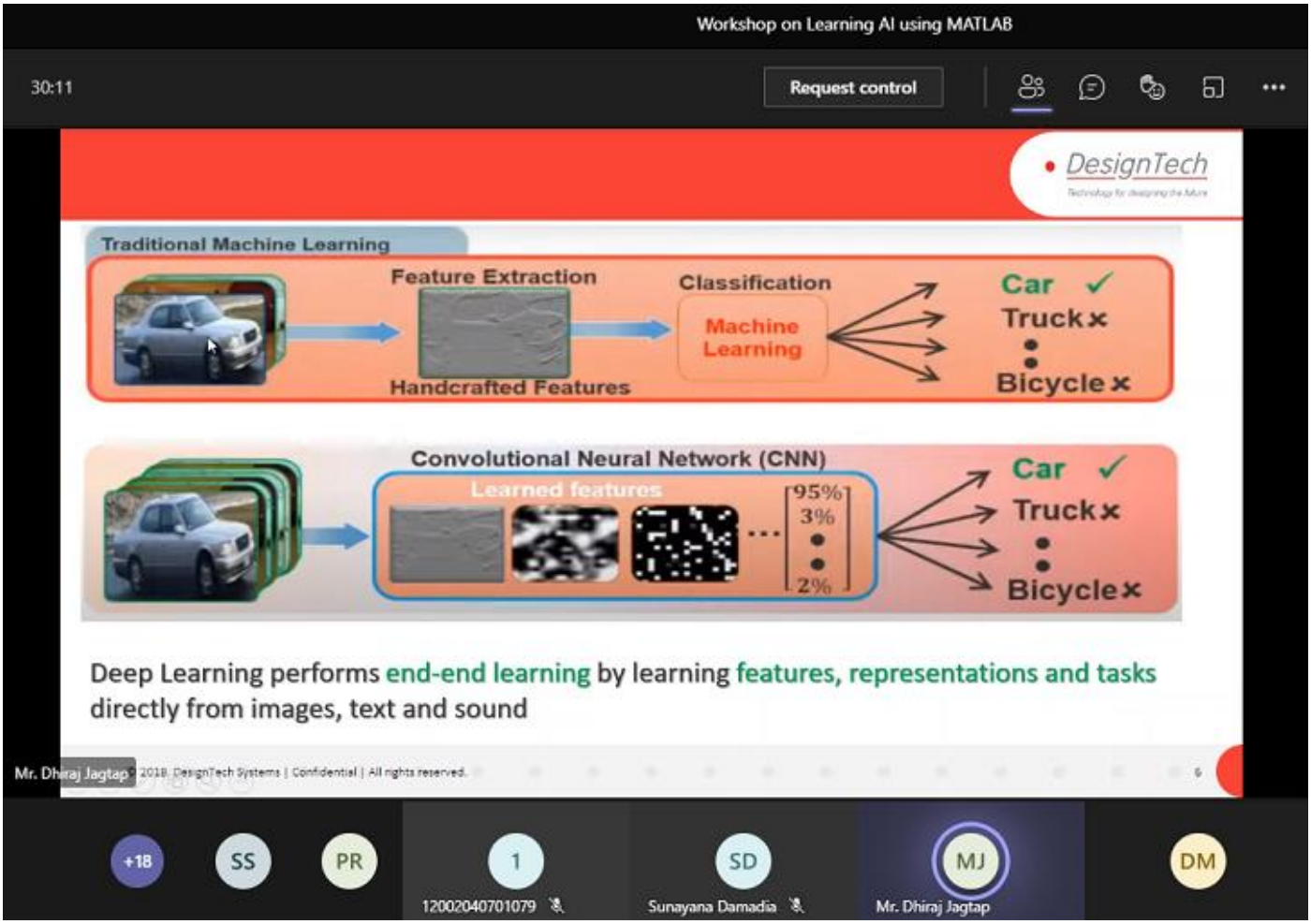
DAY – 3: Session – 1 (09 June, 2021)

Mr. Dhiraj Jagtap (Application Engineer MathWorks (MATLAB), DesignTech Systems, Pvt. Ltd., Ahmedabad) conducted session on **09, June, 2021** during 10:30 AM to 12:00 Noon. He delivered a talk on What is Deep learning? Applications of Deep Learning, what are different apps available in MATLAB? CNN Based Classification of Images.

Demo: Transfer Learning using Deep Network Designer

Introduction to Deep Learning and its Applications, Research Topics and Industrial Applications in Data Science and Deep Learning Deep learning is a machine learning technique that teaches computers to do what comes naturally to humans learns by example. Deep learning is a key technology behind driverless cars, enabling them to recognize a stop sign, or to distinguish a pedestrian from a lamppost. In this session expert talked about the key to voice control in consumer devices like phones, tablets, TVs, and hands-free speakers. Deep learning is getting lots of attention lately and for good reason. It's achieving results that were not possible before.




Workshop on Learning AI using MATLAB
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DesignTech
Traditional Machine Learning
Feature Extraction
Classification
Machine Learning
Handcrafted Features
Car
Truck
Bicycle
Convolutional Neural Network (CNN)
Learned features
95%
3%
2%
Car
Truck
Bicycle
Deep Learning performs end-end learning by learning features, representations and tasks directly from images, text and sound
Mr. Dhiraj Jagtap
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PR
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SD
Sunayana Damadia
MJ
Mr. Dhiraj Jagtap
DM