



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

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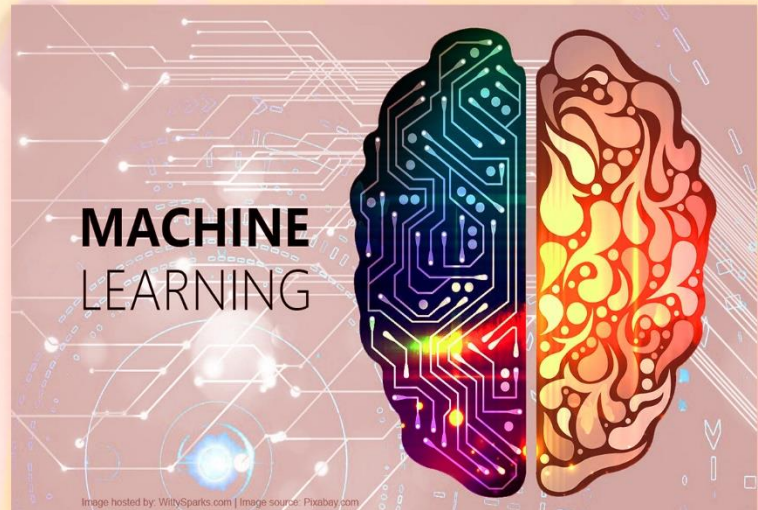
Department of Artificial Intelligence and Machine Learning

Organizes

" MACHINE LEARNING OPERATIONS (MLOPS) "

Date : 12 -16 June 2023

Time: 8.30AM to 4.00PM



Preamble :

MLOps stands for Machine Learning Operations. MLOps is a core function of Machine Learning engineering, focused on streamlining the process of taking machine learning models to production and then maintaining and monitoring them. MLOps is a collaborative function, often comprising data scientists, DevOps engineers, and IT.

Applications MLOps:

- * Manufacturing Industry
- * Logistics and Warehouse Management
- * Healthcare
- * Gaming
- * Fraud Detection
- * Internet Search

Prerequisites for MLOps:

- * C Programming

Open Course Coordinator

Dr. Chandrashekhar B N

Assistant Professor, Dept. of AI & ML

Industry Resource Person

Dr. Srinivas Padmanabhuni

Co-Founder Intellect,
testAlng.com and CityMandi [External]

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For more information

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Sl No.	Date	Topics covered		Topics covered		Topics covered	Assessment and Feedback
		8:30 to 10:30 am	10:30 To 10:50 am	10:50 to 12:50 pm	12:50 To 1:50 pm	2:00 to 4:00 pm	4:00 to 4:30 pm
1	12.06.2023	Inauguration <ul style="list-style-type: none"> ➤ ML life cycle with crisp-dm ➤ Introduction to MLOps ➤ Role of MLOps In ML Lifecycle ➤ MLOps tools landscape ➤ MLflow as MLOps ➤ Components of MLOps tools <ul style="list-style-type: none"> ● Experiments ● Tracking ● Model management ● Registry ● Versioning ● Hyper parameter tuning 		<ul style="list-style-type: none"> ➤ Data processing, Wrangling and Feature Engineering <ul style="list-style-type: none"> ● Basic Cleaning Steps for Data ● Dimensionality Reduction ● Feature Selection ● Feature Engineering <p>By Dr. Srinivas Padmanabhuni</p>		Sample models hands-on session <p>By Dr. Srinivas Padmanabhuni Co-Founder Intellect, testAlng.com and CityMandi [External]</p>	Quiz & Feedback

		<p>By</p> <p>Dr. Srinivas Padmanabhuni Co-Founder Intellect, testAlng.com and CityMandi [External]</p>		<p>Co-Founder Intellect, testAlng.com and CityMandi [External]</p>			
2	13.06.2023	<p>Model development & management with MLFlow</p> <ul style="list-style-type: none"> ● Common Steps <ul style="list-style-type: none"> ○ Model Development ○ Hyperparameter Tuning ○ Model Evaluation ● Supervised ML <ul style="list-style-type: none"> ○ Supervised Classification ○ Supervised Regression <p>By</p> <p>Dr. Srinivas Padmanabhuni Co-Founder Intellect, testAlng.com and CityMandi [External]</p>	<p>Model development & management with MLFlow</p> <ul style="list-style-type: none"> ● Unsupervised ML ● Unsupervised clustering <p>By</p> <p>Dr. Srinivas Padmanabhuni Co-Founder Intellect, testAlng.com and</p>		<p>Hands-on session</p> <p>By</p> <p>Dr. Srinivas Padmanabhuni Co-Founder Intellect, testAlng.com and CityMandi [External]</p>	<p>Quiz & Feedback</p>	

				CityMandi [External]			
3	14.06.2 023	<p>Deployment and lifecycle of ML with MLFlow</p> <ul style="list-style-type: none"> a. Model Deployment with Flask b. Using Experiments and Runs c. Model Registry <p>By</p> <p>Md. Sinan khan</p> <p>Sadanand Venkataraman</p>		<p>Model Monitoring and Model Evaluation</p> <ul style="list-style-type: none"> • Model Evaluation • Model Monitoring <p>Best practices End to End Model Lifecycle</p>		Hands-on session	
4	15.06.2 023	<p>Parallel programming for ML scientific applications</p> <p>FOUNDATION:</p> <ul style="list-style-type: none"> • Need of parallel programming, • Overview of parallel systems, 		<p>OpenMP</p> <p>Parallelization of loops- Parallelizing loops with independent iterations</p>		<p>Parallel programming for ML scientific applications:</p> <p>MPI</p>	<p>Quiz & Feedback</p>

		<p>OpenMP</p> <ul style="list-style-type: none"> • Shared memory programming model, • Using OpenMP to write multithreaded programs- • Compiling and running an OpenMP program, • Monitoring an OpenMP program, • Hands-on session <p>BY</p> <p>Dr. CHANDRASHEKHAR B N</p> <p>Asst.Prof AI&ML[internal]</p>	<p>Hands-on session</p> <p>BY</p> <p>Dr. CAHANDRASHEKHAR B N</p> <p>Asst.Prof AI&ML</p>	<ul style="list-style-type: none"> • MPI processes and messaging – • Distributed memory computers can execute in parallel, • Programmer’s view, Message passing interface, • Basic MPI operations, Process-to-process communication, • How effective are your MPI programs? <p>BY</p> <p>Dr. Archana Bhat</p> <p>Asst.Prof AI&ML[internal]</p>	
5	16.06.2023	<p>CUDA</p> <p>Introduction:</p> <ul style="list-style-type: none"> • The Benefits of Using GPUs, CUDA: A General-Purpose Parallel Computing Platform and Programming Model, 	<p>Hands-on session</p> <p>BY</p> <p>Hands-on session</p> <p>BY</p>	<p>Valedictory Function</p>	<p>Overall Feedback & Assessment</p>

		<ul style="list-style-type: none">• A Scalable Programming Model. Programming Model:• Kernels,• Thread Hierarchy,• Memory Hierarchy, <p>Hands-on session</p> <p>BY</p> <p>Dr. CHANDRASHEKHAR B N</p> <p>Asst.Prof AI&ML [internal]</p>		<p>Dr. CHANDRASHEKHAR B N</p> <p>Asst.Prof AI&ML [internal]</p>			
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