



Name of the Event	: Optimization Techniques – A Real Time Approach
Date of the event	: 27 <sup>st</sup> August 2022
Name of Mentor	: Dr. C.N. Kowthaman
No. of attendees	: 22
Mode of the workshop	: Online (Zoom) and Offline

Centurion University of Technology and Management, Odisha conducted a webinar on the topic “**Optimization Techniques – A Real Time Approach**” on 27th August 2022. Around 50 participants including faculty and students attended. The expert discussed the basics of Optimization techniques and explained how optimization techniques are different from machine learning techniques. He also briefed with different techniques using real time examples. The webinar was coordinated by Dr. C.N. Kowthaman and supervised by Dr. Sujith Mishra. The webinar started with the introduction of experts by Dr. C.N. Kowthaman. After preceding the expert, the expert thanked the department of mechanical engineering for this opportunity. He explained what optimization is and how it is used. He briefed about constrained and not constrained techniques and other techniques such as ANN, particle swarm optimization, ant colony algorithm etc. he cleared all the doubts raised by the faculties and students. In Particular, Dr. Mohanty was very impressed by the webinar and he interacted with his doubts and cleared them. He also requested the expert to give two day workshop on machine learning and other techniques.

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sundar raj is presenting

## Categorization of Unconstrained Minimization Procedures

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graph TD
    Root[Unconstrained Optimization Techniques] --> A[Techniques using Derivatives]
    Root --> B[Techniques not using Derivatives]
    A --> A1[Gradient Methods]
    A --> A2[Second-Derivative Method]
    A --> A3[Conjugate Direction Method]
    B --> B1[Other methods]
    B --> B2[Direct Search]
    B --> B3[Flexible Polyhedron Search]
    B --> B4[Random Search Method]
  
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3:29 PM | Optimization Techniques

88°F Raining now

ENG US 15:29 27-08-2022

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Big m method example.pdf - Adobe Reader

Basic Variables	$C_j \rightarrow$		-2	-1	0	0	-M	-M	Min ratio $X_B / X_k$
	$C_B$	$X_B$	$X_1$	$X_2$	$S_1$	$S_2$	$A_1$	$A_2$	
$a_1$	-M	3	$\frac{5}{3}$	1	0	0	1	0	$3/3 = 1 \rightarrow$
$a_2$	-M	6	4	3	-1	0	0	1	$6/4 = 1.5$
$S_2$	0	4	1	2	0	1	0	0	$4/1 = 4$
$Z = -9M$			$2 - 7M$	$1 - 4M$	M	0	0	0	$\leftarrow \Delta_j$
$X_1$	-2	1	1	$1/3$	0	0	X	0	$1/1/3 = 3$
$a_2$	-M	2	0	$\frac{5}{3}$	-1	0	X	1	$6/5/3 = 1.2 \rightarrow$
$S_2$	0	3	0	$5/3$	0	1	X	0	$4/5/3 = 1.8$
$Z = -2 - 2M$							X	0	$\leftarrow \Delta_j$

4:05 PM | Optimization Techniques

87°F Rain to stop

ENG US 16:05 27-08-2022



Dr. Sundar Rengasamy is currently working as an Assistant Professor in IT systems and Analytics at Indian Institute of Management (IIM) Jammu. Before joining IIM Jammu, he worked as an Assistant Professor at GITAM School of Business Bengaluru. He received his Doctoral degree in Machine Learning from National Institute of Technology, Tiruchirappalli. He also holds an M.E. degree in Industrial Engineering from College of Engineering Guindy, Chennai. He was awarded a silver medal for obtaining the second highest CGPA in M.E.

#### **Expert profile:**

#### **List of participants**

<b>1</b>	<b>Dr. Ashish Ranjan Dash</b>
<b>2</b>	<b>Dr. Trilochan Penthia</b>
<b>3</b>	<b>Nanda Kishore Ray</b>
<b>4</b>	<b>Mr. Satyanarayan Padhy</b>
<b>5</b>	<b>Mr. Rajesh Kumar Misra</b>
<b>6</b>	<b>Ms. N. Jeevaratnam</b>
<b>7</b>	<b>Dr. Prafulla Kumar Panda</b>
<b>8</b>	<b>Mr. Vignesh M.</b>
<b>9</b>	<b>Dr. Rajib Kumar Majhi</b>
<b>10</b>	<b>Dr. P. Srinivasa Rao</b>
<b>11</b>	<b>Mr. Mir Sadat Ali</b>
<b>12</b>	<b>Dr. Sujit Mishra</b>
<b>13</b>	<b>Dr. Santosh Patro</b>
<b>14</b>	<b>Dr. Nagesh Kolagani</b>
<b>15</b>	<b>Dr. Dhawaleswar Rao CH</b>

16	<b>Mr. Debendra Maharana</b>
17	<b>Mr. Md. Sameen Chishtis</b>
18	<b>Mr. Abinas Panda</b>
19	<b>Santosh Patro</b>
20	<b>Amit Rajak</b>
21	<b>Amit Kumar</b>
22	<b>Ramesh Ch. Mohapatro</b>



Dr. Prasanta Ku. Mohanty  
Dean Academic