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**NSTITUTE OF HIGHER EDUCATION AND RESEARCH** 

(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY No.173, Agharam Road, Selaiyur, Chennai, T.N. - 600 073.

#### **Requisition Letter**

Date: 18.1.2019

From Dr. K.P.Kaliyamurthie, Professor & Head, Department of CSE, Bharath Institute of Higher Education and Research, Chennai

To The Dean Engineering, Bharath Institute of Higher Education and Research, Chennai

#### Respected sir

Subject:Request of Permission to conduct a value-added course on "Comprehensive Understanding Of Deep Learning" -Reg

With reference to above subject, I would like to bring to your kind notice that, our department interested to organizevalue added course on "Comprehensive Understanding Of **Deep Learning**" in our campus premises on 30.1.2019, studentswould be participating in this course. We request you kindly to give permission to organize this event.

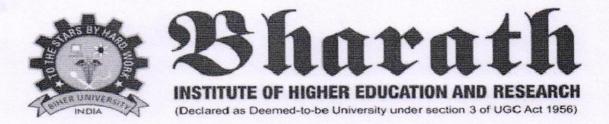
#### Venue: CSE Smart Room

Timing 4:00 PM to 5:00 PM.Monday to Friday

Submitted to Principal for approval to organize this value-added course.

**DEAN ENGINEERING** 

HEAD OF DEPARTMENT Department of Computer Science Engg., Bhorath Institute of Higher Education & Research (Declared as Deemed to be University U/S 3 of UGC Act, 1956) Chennal-600 073, INDIA



#### CIRCULAR

#### 25.1.2019

The School of computing, Bharath Institute of Higher Education and Research is planned to conduct a certification value added course on **Comprehensive Understanding Of Deep Learning**for the benefit of II, III and IV year students. This course is scheduled from 30.1.2019 for 30hours which includes theory and practical. The timings are 4 p.m-5 p.m from Monday –Friday.

All Registered Students must attend all the classes without fail. The following faculty members are assigned to handle the course. S.NO	Name of the Faculty	Designation
1	Dr.C.Nalini	Professor
2	Dr.C.Rajabhushanam	Professor

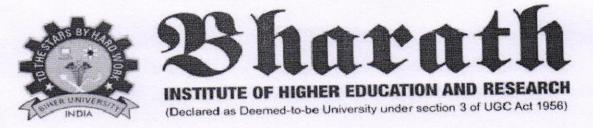
Head of Department

HEAD OF DEPARTMENT Department of Computer Sciences Engg. Bharath Institute of Higher Education & Roseard (Deciared as Deemed to be University U/S 3 of UGC Act, 1956 Chennal-600, 073, INDIA

То

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### CERTIFICATE COURSE ON COMPREHENSIVE UNDERSTANDING OF DEEP LEARNING

### Date of Introduction of the Course: 30.1.2019

### **COURSE SYLLABUS**

- 1. Inauguration of value Added course on Comprehensive Understanding of Deep Learning
- 2. Introduction: Various paradigms of earning Problems
- 3. Perspectives and Issues in Deep Learning Framework:
  - 1. Provide a brief overview of deep learning, and highlight current research efforts and the challenges to Deep Learning, as well as the future trends.
- 4. Review of Fundamental Learning techniques:
  - a. Classic Neural Networks. ...
  - b. Convolutional Neural Networks. ...
  - c. Recurrent Neural Networks (RNNs) ...
  - d. Generative Adversarial Networks. ...
  - e. Self-Organizing Maps.
- 5. Feedforward neural network
- 6. Artificial Neural Network
- 7. Activation Function, Multi-layer neural network
- 8. Training Neural Network
- 9. Risk minimization, loss function
- 10. Back propagation
- 11. Regularization, Model selection
- 12. Optimization
- 13. Conditional Random Fields
- 14. Linear Chain, Partition function
- 15. Markov network, Belief propagation
- 16. Training CRFs, Hidden Markov model, Entropy
- 17. Deep Learning:

i. Deep Feed Forward network, Regularizations

18. Recurrent Neural Network, Deep Belief Network

19. Probalistic Neural Network, Hopfield Net, Boltzman machine, RBMs

20. Sigmoid net, Autoencoders, Deep Learning research:Object recognition

- 21. Object recognition
- 22. Sparse coding, Computer vision
- 23. Natural Language Processing
- 24. Deep Learning Tools: Caffe, Theano, Torch

### **COURSE OBJECTIVES**

In this course we plan to give students an overview of the field of Deep Learning, and an indepth study into its enabling technologies and main building blocks. Students will gain hands-on experience solving relevant problems through projects that will utilize existing algorithms. It is our objective that students will develop the skills needed to become a practitioner or carry out research projects in this domain.

### Specifically, the course has the following objectives:

#### Students will learn

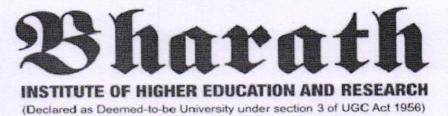
- 1) The fundamental ideas behind Deep Learning, the evolution of the paradigm, its applicability; Benefits, as well as current and future challenges;
- 2) This topics course aims to present the mathematical, statistical and computational challenges of building stable representations for high-dimensional data, such as images, text and data.
- 3) We will delve into selected topics of Deep Learning, discussing recent models from both supervised and unsupervised learning.
- 4) Special emphasis will be on convolutional architectures, invariance learning, unsupervised learning and non-convex optimization.

COURSE COORDINATOR

HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT Department of Computer Science Engg. Bharath Institute of Higher Education & Research (Deciared as Deemed to be University U/S 3 of UGC Act, 1956) Chennal-600 073. INDIA





#### CERTIFICATE COURSE ON COMPREHENSIVE UNDERSTANDING OF DEEP LEARNING

### Date of Introduction of the Course:30.1.2019

The timings are

## Time Table& Lesson plan

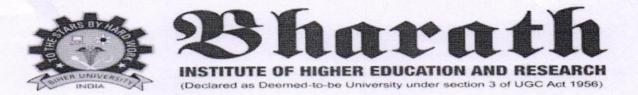
CLASS(Timing	DATE	TOPIC
4-5p.m)	DATE	10110
class 1	30/1/2019	Inauguration of value Added course on Comprehensive Understanding of Deep Learning Introduction: Various paradigms of earning Problems
Class2	31/2/2019	Perspectives and Issues in Deep Learning Framework Review of Fundamental Learning techniques
Class 3	3/2/2019	Feedforward neural network Artificial Neural Network
Class 4	4/2/2019	Activation Function, Multi- layer neural network Training Neural Network
Class 5	5/2/2019	Risk minimization, loss function Back propagation
Class 6	6/2/2019	Regularization, Model selection Optimization
Class 7	7/2/2019	Conditional Random Fields Linear Chain, Partition function
Class 8	8/2/2019	Markov network, Belief propagation

Class 9	11/2/2019	Training CRFs, Hidden
		Markov model, Entropy
Class 10	12/2/2019	Deep Learning:
		Deep Feed Forward network,
		Regularizations
Class 11	13/2/2019	Recurrent Neural Network,
		Deep Belief Network
Class 12	14/2/2019	Probalistic Neural Network,
		Hopfield Net, Boltzman
		machine, RBMs
Class 13	15/2/2019	Sigmoid net, Autoencoders,
		Deep Learning research:Object
		recognition
Class 14	18/2/2019	Object recognition
Class 15	19/2/2019	Sparse coding, Computer vision
		Natural Language Processing
		Deep Learning Tools: Caffe,
		Theano, Torch

COURSE COORDINATOR

HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT Department of Computer Sole A Engg., Shorath Institute of Higher Education & Research



## CERTIFICATE COURSE ON COMPREHENSIVE UNDERSTANDING OF DEEP LEARNING

## Date of Introduction of the Course: 30.01.2019

## School of Computing Registered Students Name List

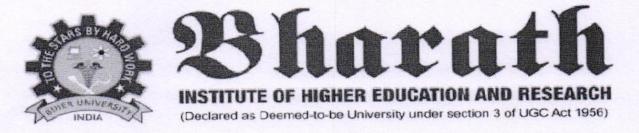
S.NO	REG.NO	NAME OF THE STUDENT				
1	U17CS001	YALAMADDI BHARGAV				
2	U17CS002	MAMDARAPU SARTHIK				
3	U17CS003	BHUVANESHWARI P				
4	U17CS004	PRASANNAKUMAR E				
5	U17CS005	MUGUNTHAN A L				
6	U17CS081	SHAIK AFREED				
7	U17CS082	NIRMALA DEVI S				
8	U17CS083	SODUM BHARATH SHIVA REDDY				
9	U17CS084	OGUBOINA KIRAN				
10	U17CS085	Y BHAVYA				
11	U17CS152	JAMMULADINNE RANGA REDDY				
12	U17CS153	BANDARU JANARDHAN				
13	U17CS154	PASAM ANIL KRISHNA				
14	U16CS701	PRADEEP SURIYA				
15	U16CS702	MOHANRAJ				
16	U16CS100	GALLA BHUCHANDRA				
17	U16CS101	NITHISHVAR S				
18	U16CS151	PODAPATI ASMITHA				
19	U16CS152	NALLAPU RAJESH				
20	U16CS707	HANUMANTHU RAO				
21	U16CS708	SIMRAN ALIZA NISAR				
22	U15CS034	CHIDIPOTHU PRATHYUSHA				
23	U15CS035	CHINTAGINJALA VENKATA SRI SAI SRAVYA				

24	U15CS087	KARTHEESWARAN P
25	U15CS088	KARTHICK S
26	U15CS180	RAVURI SRIKANTH
27	U15CS182	RICHARD WUMBRAND J
28	U15CS183	S. PUNITHA
29	U15CS184	S. SAI SHRUTHI
30	U15CS185	SADHOLLA PRANAY REDDY

COURSE COORD

### HEAD OF THE DEPARTMENT

HEAD OF DEPARTMENT Department of Computer Science & Engg., Bharath Institute of Higher Education, & Research (Deciared as Deemed to be University U/S 3 of UGC Act, 1956) Chennai-600 073, INDIA



## CERTIFICATE COURSE ON CERTIFICATE COMPREHENSIVE UNDERSTANDING **OF DEEP LEARNING**



COURSE COORDINATOR

HEAD OF THE DEPARTMENT



**Uper as Deemed-to-be University under section 3 of UGC Act 1956** 

# **CERTIFICATE OF PARTICIPATION**

# This certificate is presented to

# MOHANRAJ U16CS702

For actively participating in the value added course "Comprehensive Understanding Of Deep Learning" Conducted by School of Computing, BIHER from 30/1/2019 to 19/2/2019.

COURSE COORDINATORS

HEAD OF THE DEPARTMENT

# COURSE FEEDBACK FORM

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earlier       6-8         (ii)       Have done part of this course earlier       9         (iii)       Has adequate prior exposure to the prerequisites       9         (iii)       Have no exposure to the background material       9         The expectations for taking the course by the student are:         (a)       Enhance by skill base in the area of specializations       9         (b)       Get exposed to a relevant subject       9         (c)       Curiosity       9       9         (d)       Better Employment Opportunity       9       9         (e)       Complete Course requirements       10       10         (f)       To Improve CGPA       10       10       10         Comment of the Subject       10       10       10       10         Comment of the Subject       10       10       10       10         Clarity of expression       10       10       10       10       10 <td>Percentage of classes attended         0-20       20-40       40-60       60-80       <math>\checkmark</math>       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<math>A</math>       B       C       D         Pace of the Teaching/lecture       <math>A</math>       B       C       D       I</td>	Percentage of classes attended         0-20       20-40       40-60       60-80 $\checkmark$ Number of hours per week spent on the course (Other than lecture hours)       0-2       2-4       4-6       6-8         Preparation for the course by the student:         (i)       Have done part of this course earlier $\checkmark$ 2.5         (ii)       Has adequate prior exposure to the prerequisites $\checkmark$ 2.5         (iii)       Had to pickup relevant additional topics through concurrent study       ND         (iv)       Have no exposure to the background material $\checkmark$ 2.5         The expectations for taking the course by the student are:         (a)       Enhance by skill base in the area of specializations $\checkmark$ 2.5         (b)       Get exposed to a relevant subject $\checkmark$ 2.5         (c)       Curiosity $\checkmark$ 2.5         (d)       Better Employment Opportunity $\checkmark$ 2.5         (f)       To Improve CGPA $\checkmark$ 2.5         (if)       To Improve CGPA $\checkmark$ 2.5         (he lease of the Teaching/lecture $\checkmark$ 4 $=$ 2.5         (f)       To Improve CGPA $\checkmark$ 2.5         (g)       Complete Course requirements $\checkmark$ 2.5         (he cot the Subject	Percentage of classes attended $0-20$ $20-40$ $40-60$ $60-80$ $\checkmark$ $80$ Number of hours per week spent on the course (Other than lecture hours) $0-2$ $2-4$ $4-6$ $6-8$ $80$ Preparation for the course by the student:         (i)       Have done part of this course earlier $\checkmark e.5$ $80$ (ii)       Has adequate prior exposure to the prerequisites $\cancel{e.5}$ (iii)       Ha to pickup relevant additional topics through concurrent study       ND         (iv)       Have no exposure to the background material $\cancel{e.5}$ (iii)       Have no exposure to the background material $\cancel{e.5}$ The expectations for 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Department of Computer Scit Convergence Bhorath Institute of Higher Education & Research (Declared as Deemed to be University U/S 3 of UGC Act, 1956) Chennal-600 073. INDIA

# COURSE FEEDBACK FORM

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