



Bharath

INSTITUTE 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

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

Date: 03.01.2019

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 “**Natural Language Processing**” -Reg

With reference to above subject, I would like to bring to your kind notice that, our department interested to organize value added course on “**Natural Language Processing**” in our campus premises from 30.01.2019 for 42hours

Our internal Professors would deliver lecture for the above mentioned course. About 40 students would be participating in this course. We request you kindly to give permission to organize this.

Venue: **CSE Class room**

Timing : 1:30 PM to 4:30 PM Friday (AN) and

9.00 PM to 4.00 PM Saturday (FN&AN).

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

HOD/CSE

DEAN ENGINEERING

HEAD OF DEPARTMENT

Department of Computer Science and Engg.,
Bharath Institute of Higher Education and Research,
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)



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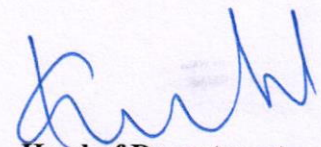
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CIRCULAR

25.01.2019

The School of computing, Bharath Institute of Higher Education and Research is planned to conduct a certification value added course on **Natural Language Processing** for the benefit of III year students. This course is scheduled from 30.01.2019 for 42hours which includes theory and practical. The timings are 1:30 PM to 4:30 PM from Friday (AN) and Saturday (FN&AN).

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

To

Copy to CSE

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Department of Computer Science & Engg.,
Bharath Institute of Higher Education & Research,
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CERTIFICATE COURSE ON Natural Language Processing

Date of Introduction of the Course: 30.01.2019

COURSE OBJECTIVE

This course covers a wide range of tasks in Natural Language Processing from basic to advanced: sentiment analysis, summarization, dialogue state tracking, to name a few. Upon completing, you will be able to recognize NLP tasks in your day-to-day work, propose approaches, and judge what techniques are likely to work well. The final project is devoted to one of the most hot topics in today's NLP. You will build your own conversational chat-bot that will assist with search on StackOverflow website.

The project will be based on practical assignments of the course, that will give you hands-on experience with such tasks as text classification, named entities recognition, and duplicates detection.

Throughout the lectures, we will aim at finding a balance between traditional and deep learning techniques in NLP and cover them in parallel.

WHAT TO EXPECT

- ✓ You will work with real databases, real data science tools, and real-world datasets.
- ✓ You will learn how Chatterbot, Tensorflow, Deep Learning, Natural Language Processing working.
- ✓ we will discuss word alignment models in machine translation and see how similar it is to attention mechanism in encoder-decoder neural networks.
- ✓ Core techniques are not treated as black boxes. On the contrary, you will get in-depth understanding of what's happening inside.
- ✓ To succeed in that, we expect your familiarity with the basics of linear algebra and probability theory, machine learning setup, and deep neural networks.
- ✓ Some materials are based on one-month-old papers and introduce you to the very state-of-the-art in NLP research.

COURSE SYLLABUS

1. Intro and text classification

- ✓ Main approaches in NLP
- ✓ Linguistic knowledge in NLP
- ✓ Text pre-processing
- ✓ Feature extraction from text
- ✓ Linear models for sentiment analysis
- ✓ Hashing trick in spam filtering
- ✓ Neural networks for words
- ✓ Neural networks for characters

2. Language modeling and sequence tagging

- ✓ Count! N-gram language models
- ✓ Perplexity: is our model surprised with a real text?
- ✓ Smoothing: what if we see new n-grams?
- ✓ Hidden Markov Models
- ✓ Viterbi algorithm: what are the most probable tags?
- ✓ MEMMs, CRFs and other sequential models for Named Entity Recognition
- ✓ Neural Language Models
- ✓ Predict a next word or a label - LSTM

3. Vector Space Models of Semantics

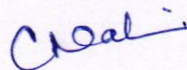
- ✓ Distributional semantics: bee and honey vs. bee and bumblebee
- ✓ Explicit and implicit matrix factorization
- ✓ Word2vec and doc2vec (and how to evaluate them)
- ✓ Word analogies without magic: king – man + woman != queen
- ✓ Why words? From character to sentence embeddings
- ✓ Topic modeling: a way to navigate through text collections
- ✓ How to train PLSA
- ✓ The zoo of topic models

4. Introduction to Machine Translation

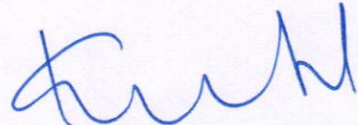
- ✓ Noisy channel: said in English, received in French
- ✓ Word Alignment Models
- ✓ Encoder-decoder architecture
- ✓ Attention mechanism
- ✓ How to deal with a vocabulary?
- ✓ How to implement a conversational chat-bot?
- ✓ Sequence to sequence learning: one-size fits all?
- ✓ Get to the point! Summarization with pointer-generator networks

5. Dialog systems

- ✓ Task-oriented dialog systems
- ✓ Intent classifier and slot tagger (NLU)
- ✓ Adding context to NLU
- ✓ Adding lexicon to NLU
- ✓ State tracking in DM
- ✓ Policy optimisation in DM
- ✓ Final remarks



COURSE COORDINATOR



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CERTIFICATE COURSE ON NATURAL LANGUAGE PROCESSING

Date of Introduction of the Course: 30.01.2019

The timings are 1:30 PM to 4:30 PM from Friday (AN) and Saturday (FN&AN)

Time Table& Lesson plan

CLASS	DATE	TOPIC
1,2	30.01.2019	<ul style="list-style-type: none">➤ Main approaches in NLP➤ Linguistic knowledge in NLP
3,4,	01-02-2019	<ul style="list-style-type: none">➤ Text pre-processing➤ Feature extraction from text➤ Linear models for sentiment analysis➤ Hashing trick in spam filtering
5,6,7,8	02-02-2019	<ul style="list-style-type: none">➤ Neural networks for words➤ Neural networks for characters➤ Count! N-gram language models➤ Perplexity: is our model surprised with a real text?
9,10	08-02-2019	<ul style="list-style-type: none">➤ Smoothing: what if we see new n-grams?➤ Hidden Markov Models
11,12,13,14	09-02-2019	<ul style="list-style-type: none">➤ Viterbi algorithm: what are the most probable tags?➤ MEMMs, CRFs and other sequential models for Named Entity Recognition➤ Neural Language Models
15,16,	15-02-2019	<ul style="list-style-type: none">➤ Predict a next word or a label - LSTM➤ Distributional semantics: bee and honey vs. bee an bumblebee

		<ul style="list-style-type: none"> ➤ Explicit and implicit matrix factorization
17,18,19,20	14-02-2019	<ul style="list-style-type: none"> ➤ Word2vec and doc2vec (and how to evaluate them) ➤ Word analogies without magic: king – man + woman != queen
21,22, 23,24	22-02-2019	<ul style="list-style-type: none"> ➤ Why words? From character to sentence embeddings ➤ Topic modelling: a way to navigate through text collections
25,26	23-02-2019	<ul style="list-style-type: none"> ➤ How to train PLSA ➤ The zoo of topic models
27,28, 29,30	01-03-2019	<ul style="list-style-type: none"> ➤ Noisy channel: said in English, received in French ➤ Word Alignment Models ➤ Encoder-decoder architecture ➤ Attention mechanism
31,32	02-03-2019	<ul style="list-style-type: none"> ➤ How to deal with a vocabulary? ➤ How to implement a conversational chat-bot?
33,34,35,36	08-03-2019	<ul style="list-style-type: none"> ➤ Sequence to sequence learning: one-size fits all? ➤ Get to the point! Summarization with pointer-generator networks ➤ Task-oriented dialog systems ➤ Intent classifier and slot tagger (NLU)
37,38	09-03-2019	<ul style="list-style-type: none"> ➤ Adding context to NLU ➤ Adding lexicon to NLU
39,40,41,42	15-03-2019	<ul style="list-style-type: none"> ➤ State tracking in DM ➤ Policy optimisation in DM

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Course on Natural Language Processing
School of Computing
Date of Introduction of the Course: 31.01.2019

Registered Students Name List

S.NO	REG.NO	NAME OF THE STUDENT
1	U16CS185	MD TAJUDDIN HAWARI
2	U16CS186	PERUGU KALYAN CHAKRAVARTHI
3	U16CS187	NALLABOTHU VENKATESH
4	U16CS188	DEBANJAN MANDAL
5	U16CS189	CHAUHAN MAYANK SUNILKUMAR
6	U16CS190	KONDAMURI KIRAN KUMAR
7	U16CS191	SHAIK AFRIDI
8	U16CS192	GANTLA VASU
9	U16CS193	MUNAGANURU SAI ANUDEEP
10	U16CS194	GADDAM AMARA HARSHAVARDHAN REDDY
11	U16CS195	BOLLAM MANINDRA
12	U16CS196	RAMADUGU ANUSHA
13	U16CS197	PRAVEENRAJ R M
14	U16CS198	VEERELLA PRAVEEN
15	U16CS140	TRIPURANENI ROHITH
16	U16CS141	JAGARLAMUDI YESWANTH
17	U16CS142	MADDINENI PRANEETH SAI
18	U16CS143	CHIRUMAMILLA VAMSI KRISHNA
19	U16CS144	NAVEEN BALAJI P
20	U16CS146	MANDALAPU VENGALA REDDY
21	U16CS147	PREM KUMAR MISHRA
22	U16CS148	THANUBUDDI RAJASHEKAR REDDY
23	U16CS149	SUDIREDDY MUKESH REDDY
24	U16CS150	SHAIK NAGUL MEERAVALI
25	U16CS151	PODAPATI ASMITHA

26	U16CS152	NALLAPU RAJESH
27	U16CS153	GANGISETTI MANEESHA
28	U16CS075	BASA RAMANJI NAIDU
29	U16CS076	ARVIND S
30	U16CS077	A VINOOTHINA
31	U16CS078	AISHWARYA KUSHWAHA
32	U16CS079	VEGI BALAJI SATYA SAI GANESH
33	U16CS080	KALAHASTI MUNIJYOSHNA
34	U16CS081	KADIVETI AJAY REDDY
35	U16CS082	ADURI SHYAM SAI KUMAR
36	U16CS083	KOTHAKOTA SAI SIRISHA
37	U16CS084	BAIRISETTI VENTATESH
38	U16CS085	PONDURU JAGADEESH
39	U16CS087	JOGA KANNABABU
40	U16CS088	GAJJI SOMA SREEKAR
41	U16CS089	KARRI SAI KUMAR
42	U16CS090	VEMULA SAI UDAYKUMAR
43	U16CS036	LAKSHMI NARAYANAN A
44	U16CS037	PALLE NAZEER VALI
45	U16CS038	GOLUSULA SAI KUMAR
46	U16CS039	PATTAN FERAZ KHAN
47	U16CS040	MOHAMMAD AHAMAD ALIKHAN
48	U16CS041	LAADVANYA G A
49	U16CS042	MD NOORUL ISLAM
50	U16CS043	RAVI KUMAR

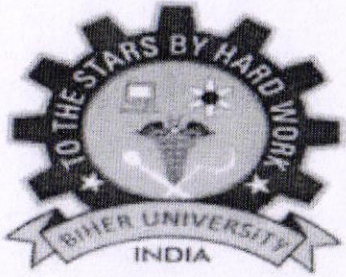
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CERTIFICATE OF PARTICIPATION

This is Presented to

Mr. Harindra Reddy

For actively participating in value added course on
“*Natural Language Processing*” conducted by School
Computing , BIHER from 30/01/2019 to 15/03/2019.

Chal
Coordinator

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HOD

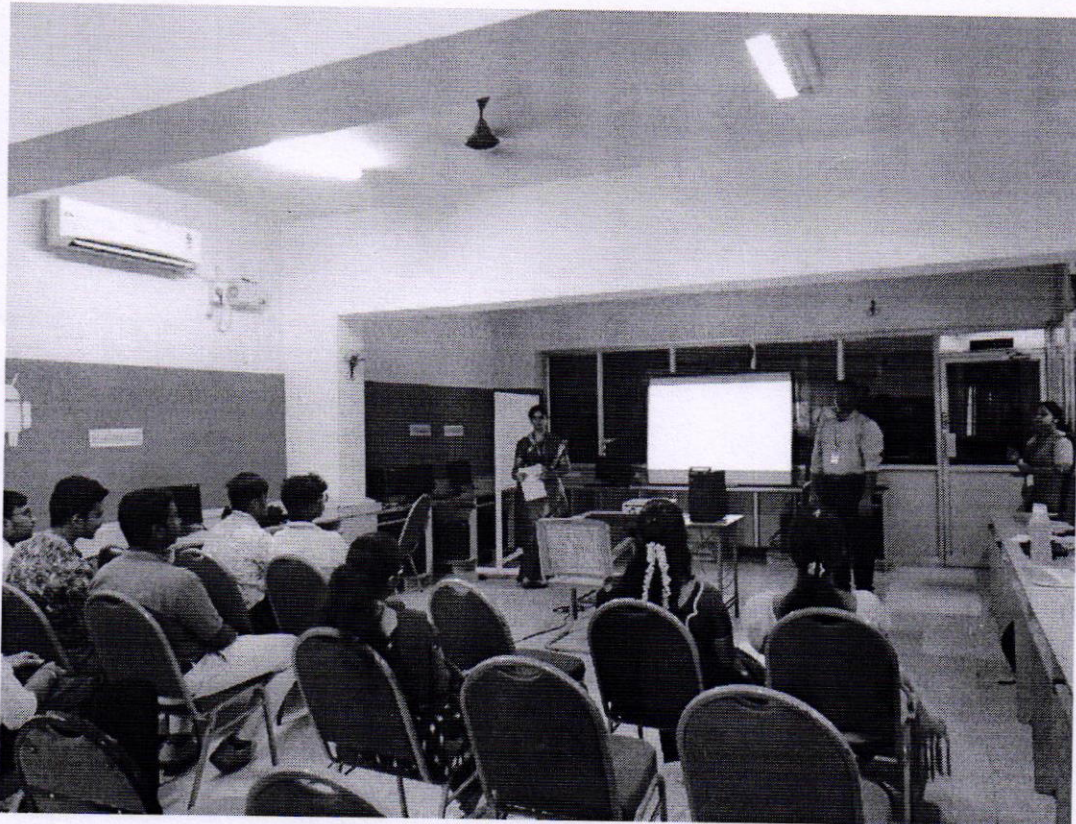
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Director



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Course on Natural Language Processing
School of Computing
Date of Introduction of the Course: 31.01.2019



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COURSE FEEDBACK FORM

Academic Year		2018-2019							
Term									
Course Number									
Course Title		Natural Language Processing							
Number of Credits									
Type of Course	Regular		Elective		Add-on				✓
I. Information on the Respondent: (Tick (✓) Appropriately)									
1. Percentage of classes attended									
0-20		20-40		40-60		60-80	✓	80-100	
2. Number of hours per week spent on the course (Other than lecture hours)									
0-2		2-4		4-6	✓	6-8		8-10	
3. Preparation for the course by the student:									
(i)	Have done part of this course earlier								No
(ii)	Has adequate prior exposure to the prerequisites								yes
(iii)	Had to pickup relevant additional topics through concurrent study								yes
(iv)	Have no exposure to the background material								yes
4. The expectations for taking the course by the student are:									
(a)	Enhance by skill base in the area of specializations								yes
(b)	Get exposed to a relevant subject								yes
(c)	Curiosity								yes
(d)	Better Employment Opportunity								yes
(e)	Complete Course requirements								yes
(f)	To Improve CGPA								yes
About the Instructor: Information on the Respondent: (Tick (✓) Appropriately)									
		A	B	C	D	E			
1.	Pace of the Teaching/lecture		✓						
2.	Comment of the Subject		✓						
3.	Clarity of expression		✓						
4.	Level of preparation	✓							
5.	Level of interaction								
6.	Accessibility outside the class	✓							
7.	Others (please specify)								
A: Excellent		B: Very Good		C: Good		D: Satisfactory		E: Poor	


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COURSE FEEDBACK FORM

Academic Year		2018 - 2019			
Term					
Course Number					
Course Title		Natural Language Processing			
Number of Credits					
Type of Course	Regular		Elective		Add-on
					✓

I. Information on the Respondent: (Tick (✓) Appropriately)

1. Percentage of classes attended

0-20		20-40		40-60		60-80	✓	80-100	
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2. Number of hours per week spent on the course (Other than lecture hours)

0-2		2-4		4-6		6-8	✓	8-10	
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3. Preparation for the course by the student:

(i)	Have done part of this course earlier	No
(ii)	Has adequate prior exposure to the prerequisites	yes
(iii)	Had to pickup relevant additional topics through concurrent study	yes
(iv)	Have no exposure to the background material	yes

4. The expectations for taking the course by the student are:

(a)	Enhance by skill base in the area of specializations	yes
(b)	Get exposed to a relevant subject	yes
(c)	Curiosity	yes
(d)	Better Employment Opportunity	yes
(e)	Complete Course requirements	yes
(f)	To Improve CGPA	yes

About the Instructor: Information on the Respondent: (Tick (✓) Appropriately)

		A	B	C	D	E
1.	Pace of the Teaching/lecture	✓				
2.	Comment of the Subject	✓				
3.	Clarity of expression	✓				
4.	Level of preparation	✓	✓			
5.	Level of interaction		✓			
6.	Accessibility outside the class		✓			
7.	Others (please specify)					

A: Excellent		B: Very Good	✓	C: Good		D: Satisfactory		E: Poor
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