POORNIMA
COLLEGE OF ENGINEERING

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Report on 2-days Faculty Development Program

- **TITLE AND DURATION:** "Trends and Applications in Machine Learning and Deep Learning" from 4th-5th September 2020
- **SPONSORS:** Poornima College of Engineering, Jaipur
- **SUPPORTERS:** Rajasthan Technical University Kota
- **ORGANIZERS:** Department of Computer Engineering Poornima College of Engineering, Jaipur
- **OBJECTIVES**: Machine Learning and Deep Learning has changed the way of our life in past two decade. It has tried to simulate human intelligence through machines in all type of applications. With easy availability of huge amount of data there is good reason to believe that intelligent learning will become necessary ingredient for technological progress.

  This FDP aims to provide an opportunity to enhance knowledge about the key concepts and latest advancements in field of machine learning and Deep Learning. The participants will also be able to explore various research opportunities and challenges in the field of machine learning and Deep Learning The primary objective of this one-week Faculty Development Program (FDP) on Research Applications in Artificial Intelligence and Machine Learning was to enrich faculty members of Computer Science stream with preliminaries of artificial intelligence and its modern applications in machine learning and deep learning. The FDP was divided into several modules falling under the umbrella of Artificial Intelligence including Machine Learning, Deep Learning, Data Science, Natural Language Processing and Digital Image Processing. The objective was to address modern trends in the field of Artificial Intelligence with real time problem solving. This FDP focused on hands-on implementation of various algorithms to deliver practical skill to participants.

- **EXPECTED OUTCOMES:**
  - Understand the basic concept of pattern recognition, probability distribution, regression and its types.
  - Identifying and Analyze back propagation, training methods and deep learning for neural networks.

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- To provide research-oriented discussion along with different types of classifiers for algorithm independent machine learning.

BROCHURE / POSTER / LEAFLET / FLYER:

PROGRAM SCHEDULE:

Day 1 – Friday, September 4, 2020

Inaugural Session:

Took place in presence of 200 Participants and eminent guests Dr. Mahesh Bundele, Director Principal, Poornima College of Engineering, Dr. Nitin Khanna, Assistant Professor, IIT Gandhinagar, Dr. Kuldeep Singh, Assistant Professor, MNIT Jaipur,

Mr. Vipin Prakash Yadav, Assistant Professor, RTU Event Coordinator, Dr. Surendra Kumar Yadav, HOD, CSE, Poornima College of Engineering. Dr. Neelam Chaplot welcome everyone and briefed everyone about the Faculty development program.

Welcome speech was delivered by Dr. Mahesh Bundele, Director, PCE. The vote of thanks proposed by Dr. Surendra Kumar Yadav, Head Department of Computer Engineering, PCE.

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Session I: Deep Learning and its Applications by Dr. Kuldeep Singh, MNIT, Jaipur

Dr. Kuldeep discussed about applications and basic concepts of deep learning. He also how imparted in-depth knowledge about the various types of methods used in deep learning.

Session II: Deep Fake and Ethics of Artificial Intelligence by Dr. Om Prakash Rishi, Director IT, University of Kota

Dr. Om Prakash Rishi started the session with a video that was created using Deep Fake after that he explained what is deep fake and what are the models that are used to create deep fake. He discussed about the methodology adopted to create deep fake. He also provided the insight about various application available on internet to create deep fake. He also discussed about the various ethics to be followed for creating such applications and using such applications.

Day 2 – Saturday, September 5, 2020

Session III: Natural Language Processing in Health Care by Mr. Akashat Gupta, Machine Learning Engineer, Navi Life Care

Mr. Akashat Gupta discussed about use of natural language processing in creating applications in health care. He gave demonstration of applications that can extract, Disease, drugs, strength of drugs and dosage from the instructions provided. He demonstrated hands on for the natural language processing in medical domain. He taught how to code such applications using python. He also demonstrated that how such applications can be deployed in actual environments.

Session IV: Machine learning in Medical imaging by Dr. Saugata Sinha, Assistant Professor, Visvesvaraya National Institute of Technology, Nagpur

Dr. Saugata discussed about the various applications that can be created using machine learning techniques in medical field. He discussed about the type of data that that can be used to create such applications and how to convert such data in useful information. He also discussed in detail about the implementation and creation of applications that use medical imaging.

Session V: Machine Learning and Deep Learning for Multimedia Forensics: Is seeing still believing? By Dr. Nitin Khanna, Assistant Professor, IIT Gandhinagar

Dr. Nitin Khanna discussed about the use of machine learning and deep learning for multimedia forensic. He discussed about how to identify various hardware devices that are used to perform forgery, using machine learning and deep learning. He discussed about the various models used to perform the task. He also discussed algorithmic details of the methods used to perform such tasks. He also discussed about the creation of fake images and methods used to identify the fake images. Identify that how this image can be identified.

Valedictory Session:

Chief Guest Dr. Ashok Bhansali Director, Career Development Center & Professor @ OP Jindal University, Chhattisgarh

The Valedictory Session started by welcoming honorable Chief Guest Dr. Ashok Bhansali and dignitaries Mr. Vipin Prakash Yadav, Assistant Professor, RTU Event Coordinator, Dr. Surendra Kumar Yadav, HOD,CSE, Poornima College of Engineering and Dr. Praveen Gupta Professor, PCE by Dr. Neelam Chaplot . Then she presented the brief report of activities and session that took place in two days under the Faculty Development program.

Honorable Chief Guest Dr. Ashok Bhansali addressed the audience and he congratulated audience for attending such workshop and discussed about the necessity of conducting such workshops. He also pointed out that how these technologies are making revolution in world. He said that lot of work is required to be done in this field by Indian industries so that India can lead in the Artificial Intelligence field.

The valedictory session ended with a vote of thanks proposed by Dr. Surendra Kumar Yadav, HOD, CSE to each and every one present and involved in successful execution of the FDP.

INAUGURAL SESSION:

Took place in presence of 200 Participants and eminent guests Dr. Mahesh Bundele, Director-Principal, Poornima College of Engineering, Dr. Nitin Khanna, Assistant Professor, IIT Gandhinagar, Dr. Kuldeep Singh, Assistant Professor, MNIT Jaipur,

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Welcome speech was delivered by Dr. Mahesh Bundele, Director, PCE. The vote of thanks proposed by Dr. Surendra Kumar Yadav, Head Department of Computer Engineering, PCE.

DETAILS OF RESOURCE PERSONS:

- **Dr. O. P. Rishi**, Director IT, University of Kota
- **Dr. Nitin Khanna**, Assistant Professor, IIT Gandhinagar
- **Dr. Kuldeep Singh**, Assistant Professor, MNIT Jaipur
- **Dr. Saugata Sinha,** Assistant Professor, VNIT Nagpur
- **Mr. Akshat Gupta**, Machine Learning Engineer, Navi Life Care

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GLIPMSES OF CONDUCTION:

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मशीन व डीप लर्निंग के लेटेस्ट ट्रेंड्स पर हुई चर्चा

ब्यूरो/नवज्योति, जयपुर। राजस्थान टेक्निकल यूनिवर्सिटी (आरटीयू) कोटा और पूर्णिमा कॉलेज ऑफ इंजीनियरिंग के कंप्यूटर इंजीनियरिंग डिपार्टमेंट की ओर से ट्रेंड्स एंड एप्लीकेशंस इन मशीन एंड डीप लर्निंग विषय पर दो दिवसीय फैकल्टी डवलपमेंट प्रोग्राम आयोजित किया गया। इसमें करीब 150 फैकल्टी मेंबर्स शामिल हुए। इन सभी प्रतिभागियों को मशीन व डीप लर्निंग के विभिन्न पहलुओं की जानकारी दी गई। एमएनआईटी जयपुर के असिस्टेंट प्रोफेसर डॉ. कुलदीप सिंह ने डीप लर्निंग के विभिन्न मॉडल्स के

बारे में बताया। यूनिवर्सिटी ऑफ कोटा के डायरेक्टर आईटी डॉ. ओमप्रकाश ने डीपफेक टेक्नोलॉजी के बारे में विस्तार से बताया।

नीविया लाइफ केयर गुरुग्राम के इंजीनियर अक्षत गुप्ता ने बताया कि बीमारियों को पहचानने व दवाओं के चयन में यह तकनीक काफी सहायक साबित होती है। इस मौके पर आईआईटीए गांधीनगर के असिस्टेंट प्रोफेसर नितिन खन्ना, डॉ. अशोक भंसाली सहित अन्य लोगों ने भी अपने विचार रखे।

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CONTENT DELIVERY / PRACTICAL SESSIONS:

- Generalized Linear Models in Python
- Decision Tree Models using Python
- Boosting Algorithms using Python
- Support Vector Machines (SVM), Naïve Bayes and KNN in Python
- Unsupervised learning in Python
- Neural Networks
- Deep Feed Forward & Convolutional Neural Networks
- Introduction to Keras
- Sequence to Sequence models with Recurrent Neural Networks, Long-Short Term Memory (LSTM) and Gated Recurrent Unit (GRU)
- Unsupervised Deep Learning

VALEDICTORY SESSIONS:

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LIST OF PARTICIPANTS:

S. No.	Name	Organization
1	Mr. Satpal Singh	Manipal University Jaipur
2	Mr. Amit Kumar Jha	Poornima College Of Engineering, Jaipur
3	Mrs. Deepika Sharma	Manipal University Jaipur
4	Mr. Amit Kumar Jain	Poornima College Of Engineering, Jaipur
5	Mr. Manish Dubey	Poornima College Of Engineering, Jaipur
6	Ms. Bhawana Sharma	Manipal University Jaipur
7	Mr. Kalpit Jain	Poornima College Of Engineering, Jaipur
8	Mr Manoj R	Manipal University Jaipur
9	Mr. Satpal Singh Kushwaha	Manipal University Jaipur
10	Mr.Devender Kumar Dhaked	Rajasthan College Of Engineering For Women
11	Ms. Seeta Gupta	Poornima College Of Engineering, Jaipur
12	Mr. Prashant Hemrajani	Manipal University Jaipur
13	Mr. Anil Kumar	BSNL Jaipur
14	Ms. Reena Sharma	Poornima College Of Engineering, Jaipur
15	Ms. Richa Singh	Pranveer Singh Institute Of Technology, Kanpur
16	Mr. Amit Kumar Bairwa	Manipal University Jaipur
17	Mr. Ankit Saxena	Invertis University
18	Mr. Uttam Sharma	BSNL Jaipur
19	Mr. Ashok Kumar Kumawat	Manipal University Jaipur
20	Vineeta Soni	Manipal University Jaipur
21	Dr. Lokesh Sharma	Manipal University Jaipur
22	Mr. Prem Kumar Bhaskar	Lord Buddha Education Foundation, Kathmandu, Nepal
23	Mr. Shamneesh Sharma	Poornima University, Jaipur, Rajasthan, India
24	Er. Dharmveer Yadav	Zone Tech The Institute Of Engineers
25	Ms. Khushi Yadav	Shivam ITI Pvt. Ltd.
26	Er. Sandeep Kumar Bothra	S. S. Jain Subodh P. G. (Autonomous) College, Jaipur
27	Ms. Neha Sharma	Poornima University
28	Mr. Suyog Pandurang Mahajan	Maharashtra Institute Of Technology, Aurangabad
29	Dr. Sunita Gupta	SKIT, Jaipur
30	Mr. Honey Gocher	Amity University Rajasthan
31	Ms. Agrawal Anu	Lords University, Alwar
32	Dr. Praveen Gupta	Poornima College Of Engineering, Jaipur

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S. No.	Name	Organization
33	Mr Mukesh Kumar Lohar	GITS, Udaipur
34	Dr. Sandeep Joshi	Manipal University Jaipur
35	Mr. Chandan Singh	Lal Bahadur Shastri PG College Jaipur
36	Mr. Ayush Goyal	Poornima Institute of Engineering And Technology, Jai-pur
37	Mr. Rakesh Ranjan	Shankara Institute of Technology, Kukas, Jaipur
38	Mr. Rajesh Kanwadia	Shankara Institute of Technology, Kukas, Jaipur
39	Ms. Shweta Agrawal	Shankara Institute of Technology, Kukas, Jaipur
40	Mr. Sandeep Bhargava	Poornima College Of Engineering, Jaipur
41	Mrs. Meenakshi Tiwari	St. Wilfreds Institute of Engineering & Technology Aj-mer
42	Mr. Jaya Krishna R	Manipal University Jaipur
43	Dr. Vijay Kumar Sharma	Manipal University Jaipur

- **FEEDBACK ANALYSIS:** *** Add Feedback / Attainment Calculations**

	Effective use of Time	Effectiveness of Theoretical Session	Course Content Plan- ning and Organization	Effectiveness of Hands on Sessions
Strongly Agree	28	25	31	24
Agree	11	11	8	12
Neutral	0	6	0	3
Disagree	0	0	0	0
Strongly Disagree	4	1	4	4

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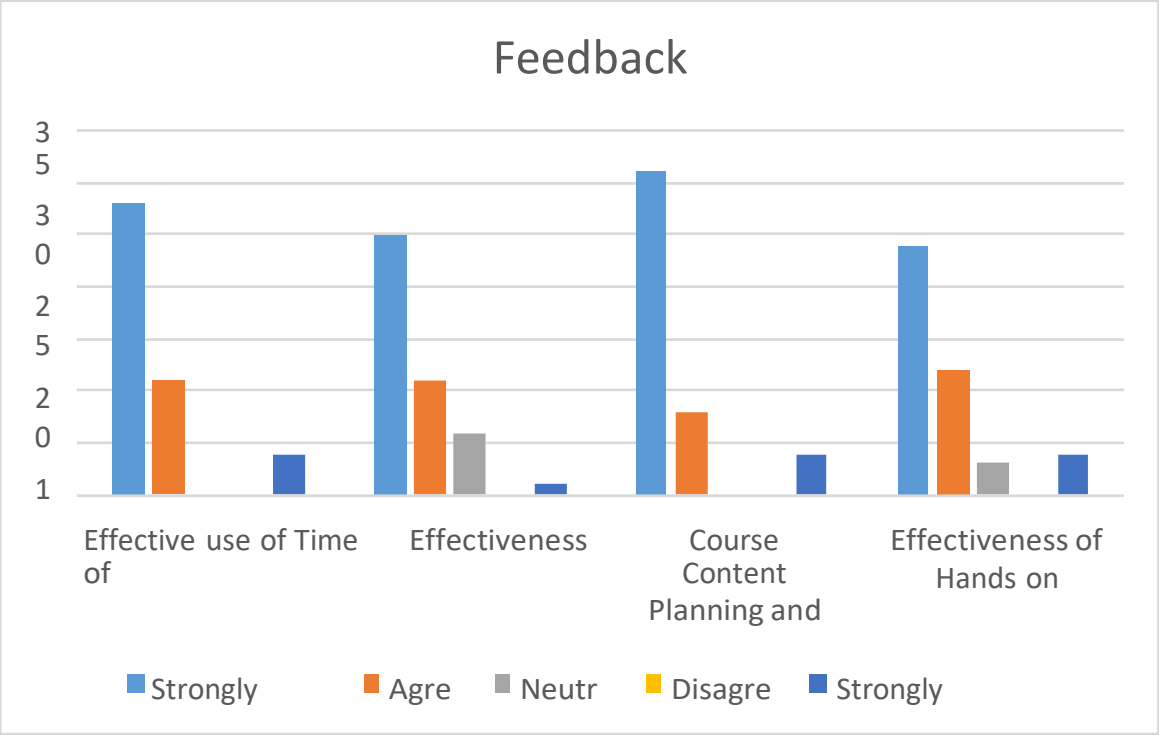

- **SWOT ANALYSIS:**
  - It promotes student-centered learning and collaboration
  - Lessons and Contents are more accessible
  - This is more about proper planning and includes any iteration required for the purpose of highly building highly scalable software.
- **BUDGET & ACTUALS: N/A**

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