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**Department of Computer Science and
Engineering**



TECH SPACE

Volume-12

June 2021

**Meerut Institute of Engineering and
Technology**

**N.H. 58, Delhi-Roorkee Highway, Baghpat
Bypass Road Crossing, Meerut, Uttar**



Vision of Department

“To be an excellent department that imparts value based quality education and uplifts innovative research in the ever-changing field of technology.”

Mission of Department

1. To fulfill the requirement of skilled human resources with focus on quality education.
2. To create globally competent and socially responsible technocrats by providing value and need based training.
3. To improve Industry-Institution Interaction and encourage the innovative research activities.

Program Education Objective

After five years of graduation students will:

PEO 1: Students will have the successful careers in the field of computer science and allied sectors as an innovative engineer.

PEO 2: Students will continue to learn and advance their careers through participation in professional activities, attainment of professional certification and seeking advance studies.

PEO 3: Students will be able to demonstrate a commitment to life-long learning.

PEO 4: Students will be ready to serve society in any manner and become a responsible and aware citizen.

PEO 5: Establishing students in a leadership role in any field.



Program Outcomes

Engineering Graduates will be able to:

- 1. Engineering Knowledge :** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



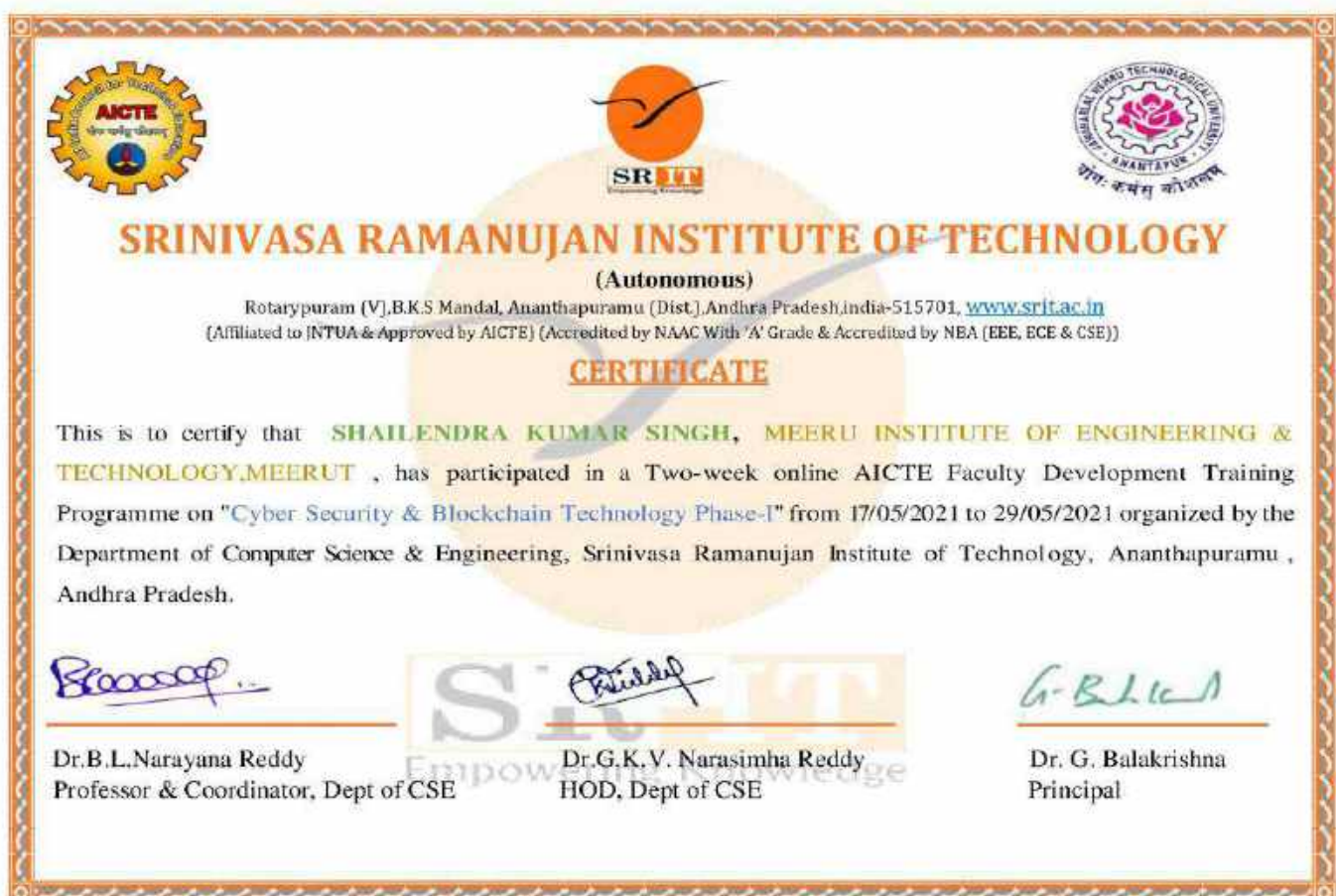
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Faculty Development Program

Increasing internationalization in teaching is strongly supported by the Indian education sector and is considered vital for Indian institutions in developing India's capacity in research and innovation, driving up India's institutional ranking and increasing the quality of teaching and learning. Thus, enhancing the academic and intellectual environment in the institutions by providing faculty members with ample opportunities to pursue research and also to participate in seminars / conferences / workshops has become vital for developing nations like India. Participation in such programs would enable faculty members to update their research and pedagogical skills. Higher education institutions are starting to adapt and respond to professionals already in employment, mature learners and the demand from students enrolled for skills for employability programs. With the aim of equipping faculty members with required skills and knowledge, MIET Meerut pursues the Faculty Development Program as its primary objective.

FDP on Cyber Security & Blockchain Technology By Mr. Shailendra Kumar Singh (Assistant Professor) from 17/05/2021 to 29/05/2021.





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Faculty Development Program

FDP on Research Methodology with Scientific Tools by Mr. Vivek Kumar (Assistant Professor)
from 01/03/2021 to 05/03/2021.



One Week Online Faculty Development Program



on
Research Methodology with Scientific Tools
(March 01-05, 2021)

Organised by

Shri Rawatpura Sarkar University, Raipur, Chhattisgarh

Certificate of Participation

This is to certify that Prof/Dr/Mr/Ms/ Vivek kumar
of MEERUT INSTITUTE OF ENGINEERING AND TECHNOLOGY, MEERUT has actively participated in the "One
Week Online Faculty Development Program on "Research Methodology with Scientific Tools" organised by Faculty of
Sciences held on March 01-05, 2021 at Shri Rawatpura Sarkar University, Raipur (Chhattisgarh), India,

Dr.R.P. Rajwade
Dean, Faculty of Science
SRU, Raipur

Dr. Kapil Kumar Bansal
Convener & Dean of Academics
SRU, Raipur

Prof.(Dr.) Rajesh Kumar Pathak
Vice-Chancellor
SRU, Raipur



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Faculty Development Program

FDP on Artificial Intelligent, GPUs & Deep Learning by Mr. Vivek Kumar (Assistant Professor)
from 20/04/2021 to 19/05/2021.

No.: CAS/AI/01/2021/013

Date: 20 May, 2021



CENTRE FOR ADVANCED STUDIES

DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

Jankipuram Vistar, Lucknow, Uttar Pradesh 226031



CERTIFICATE OF ATTENDANCE

This is Certify that Vivek Kumar of Meerut Institute Of Engineering & Technology, Meerut has attended One Month Online Faculty Development Program/Training on "Artificial Intelligence, GPUs & Deep Learning" organized at Centre for Advanced Studies, Dr. A.P.J. Abdul Kalam Technical University, Lucknow from 20 April 2021 to 19 May, 2021.

Prof. M. K. Dutta

Director

Centre for Advanced Studies, A.K.T.U., Lucknow

Prof. Vinay Kumar Pathak

Vice Chancellor

Dr. A.P.J. Abdul Kalam Technical University, Lucknow



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Faculty Development Program

FDP on Fundamental of RPA by Mr. Punit Mittal (Assistant Professor) from 21/06/2021 to 25/06/2021.





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Department Events

Academia – Corporate Leadership Talk- Series – I

Online Mode

6th Feb (Saturday), 2021, Time- 2.00 PM – 5.00 PM

Expert Members



Er. Deeksha Sood
Principal Software Engineer
Atlassian Corporation
Bangalore Urban
Karnataka, India



Er. Saurabh Kumar
Principal Software Engineer
Microsoft
Bangalore Urban
Karnataka, India



Er. Vishwastam Shukla
Chief Technology Officer (CTO)
HackerEarth
Bangalore Urban
Karnataka, India



Er. Gyanveer Singh
Founding & Managing Partner
LexAnalytics Consulting
Bengaluru
Karnataka, India

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Department of Computer Science & Engineering

Meerut Institute of Engineering & Technology, Meerut

Organizing Team Members

Patron

Er. Vishnu Sheeran Agarwal, Chairman, MIET

Advisory Chair

Er. Puneet Agarwal, Vice- Chairman, MIET
Dr. Mayank Garg, Executive Director, MIET
Dr. D. K. Sharma, Dean Academics, MIET

Advisory Co-Chair

Ms. Akanksha Agarwal
Head, Training & Placement, MIET
Dr. Sunil Kumar
HoD, CSE, MIET

Event Organizing Chair

Dr. Ranjeet Kumar
Dr. Rajesh Kumar Singh
Mr. Md Iqbal
Mr. Shailendra Kumar Singh

Technical Committee

Mr. Sanjay Sonkar
Ms. Nidhi Chaudhary (Moderator)
Mr. Baldevya Mitra
Ms. Shweta Paliwal
Mr. Ayush Singhal

Media and Publicity Committee

Mr. Chaman Kumar
Mr. Vishwas Gautam
Mr. Ajay Choudhary



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Department Events



W E B I N A R O N

 **Adobe Creative Cloud**



For graphics that speak volumes.

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DESIGN CLUB

Pushpak Gupta
Sunidhi Garg

Shivansh Chaudhary
Gaytri Yadav

Adobe Creative Campus

Sunday, 27 June 2021 | 12 p.m.

Faculty Coordinator

Dr. Nidhi Tyagi

Student Coordinators

Pushpak Gupta

Sunidhi Garg



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Department Society CSI

**Meerut Institute of Engineering & Technology, Meerut
Student's Branch
Computer Society of India, INDIA
(Meerut Chapter)**



Dr. Mukesh Rawat
Faculty Advisor



Dr. Swati Sharma
Faculty Advisor



Mr. Vansh Rana
President



Mr. Sagar Jain
Vice – President



Mr. Abhinav Mishra
Event Head



Mr. Himanshu Soam
Treasurer



Ms. Ashtmi Bhardwaj
Media Head



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Department Society CSI & UDYAT Event

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Webinar on



Use of AI in Agriculture

(Organize By Department of CSE, IT and CSIT)



Dr. R.N. Sahoo
(Principal Scientist
Indian Agriculture
Research Institute)



Gaurav Goswami
(DevOps Engineer
At IBM ISL Bangalore)

Webinar link :-

<https://zoom.us/j/96690635556>

Coordinator:-

Mr. Gaurav Goel
Dr. Swati Sharma
Dr. Mukesh Rawat



Date :- April 10, 2021
Time :- 12:00 Noon
Virtual Meetup



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Department Society UDYAT Event



Webinar on Telecom Convergence

(Organize By Department of CSE)



Dr. Sandeep Agarwal
(Program Manager and
Delivery Head, TCS)



Rajit Sikka
(Head academic relations,
North India, TCS)

Date :- April 9, 2021
Time :- 02:00 PM
Virtual Meetup



For Details Contact:-

Samarth Anand | Dr. Mukesh Rawat
(7060226350) | Udyat Mentor

Webinar link :- <https://zoom.us/j/96538220341>



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Department Society UDYAT Event

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Workshop on Block Chain Technology

(Organize By Department of CSE)



Mr. Nakul Agarwal
(Business Analyst in Tata
Consultancy Services)



Rajit Sikka
(Institute Industry
Relationship)

Date :- June 26, 2021
Time :- 03:00 PM
Virtual Meetup



TATA CONSULTANCY SERVICES

Innovation Ambassadors:-
Dr. Mukesh Rawat (Mentor)
Dr. Swati Sharma

Webinar link :- <https://zoom.us/j/86200717785>



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Students Achievement



Certificate of Completion

This is to certify that

Ritika Kanojia

has successfully completed a short course in

Effective Communication in the Workplace

Designed by DeakinCo.

23 May 2021

Glenn Campbell, CEO
DeakinCo.



DEAKINCo.

Certificate No: **DCFS0121**

Issued by DeakinCo,
a corporate division of
Deakin University, Australia



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Students Achievement



CERTIFICATE

OF PARTICIPATION

This is to certify that

Ritika Kanojia

has successfully completed the

"Basics of Cloud Computing"

and is awarded this Certificate of Participation.

Issued on 28 June 2021

Bhaskaran Srinivasan
Program Director
Manipal ProLearn



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Students Achievement

This certificate is computer generated and can be verified by scanning the QR code given below. This will display the certificate from the NPTEL repository, <https://nptel.ac.in/noc/>

Roll No: NPTEL21HS05S21960041
To
TEJASV PRATAP TYAGI
D-101 GOLDEN HEIGHT, GREENWOOD CITY
BAGPATH BYPASS
MEERUT
UTTAR PRADESH - 250002
PH. NO :9634143408



Score	Type of Certificate
≥ 90	Elite+Gold
75-89	Elite+Silver
≥ 60	Elite
40-59	Successfully Completed
< 40	No Certificate

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
TEJASV PRATAP TYAGI
for successfully completing the course

Speaking Effectively

with a consolidated score of **76** %

Online Assignments	24.17/25	Proctored Exam	51.75/75
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Total number of candidates certified in this course: **3145**


Prof. G P Raja Sekhar
Dean, Continuing Education
IIT Kharagpur

Jan-Mar 2021
(8 week course)


Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL21HS05S21960041

To validate and check scores: <https://nptel.ac.in/noc/>



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Students Achievement

UC DAVIS

Feb 2, 2021

Ujjwal Kumar

has successfully completed

SQL for Data Science

an online non-credit course authorized by University of California, Davis and offered through Coursera

Julie St. Lawrence
AI Strategy Consultant for Accenture Applied Intelligence
Founder of Women in Data (WID)
Instructor, University of California, Davis Extension

COURSE
CERTIFICATE



Verify at coursera.org/verify/S2MBBTM4F7B9

Coursera has confirmed the identity of this individual and their participation in the course.



Faculties Achievement



Jan 8, 2021

sanjay kumar sonker

has successfully completed

Reliable Google Cloud Infrastructure: Design and
Process

an online non-credit course authorized by Google Cloud and offered through Coursera

Google Cloud Training

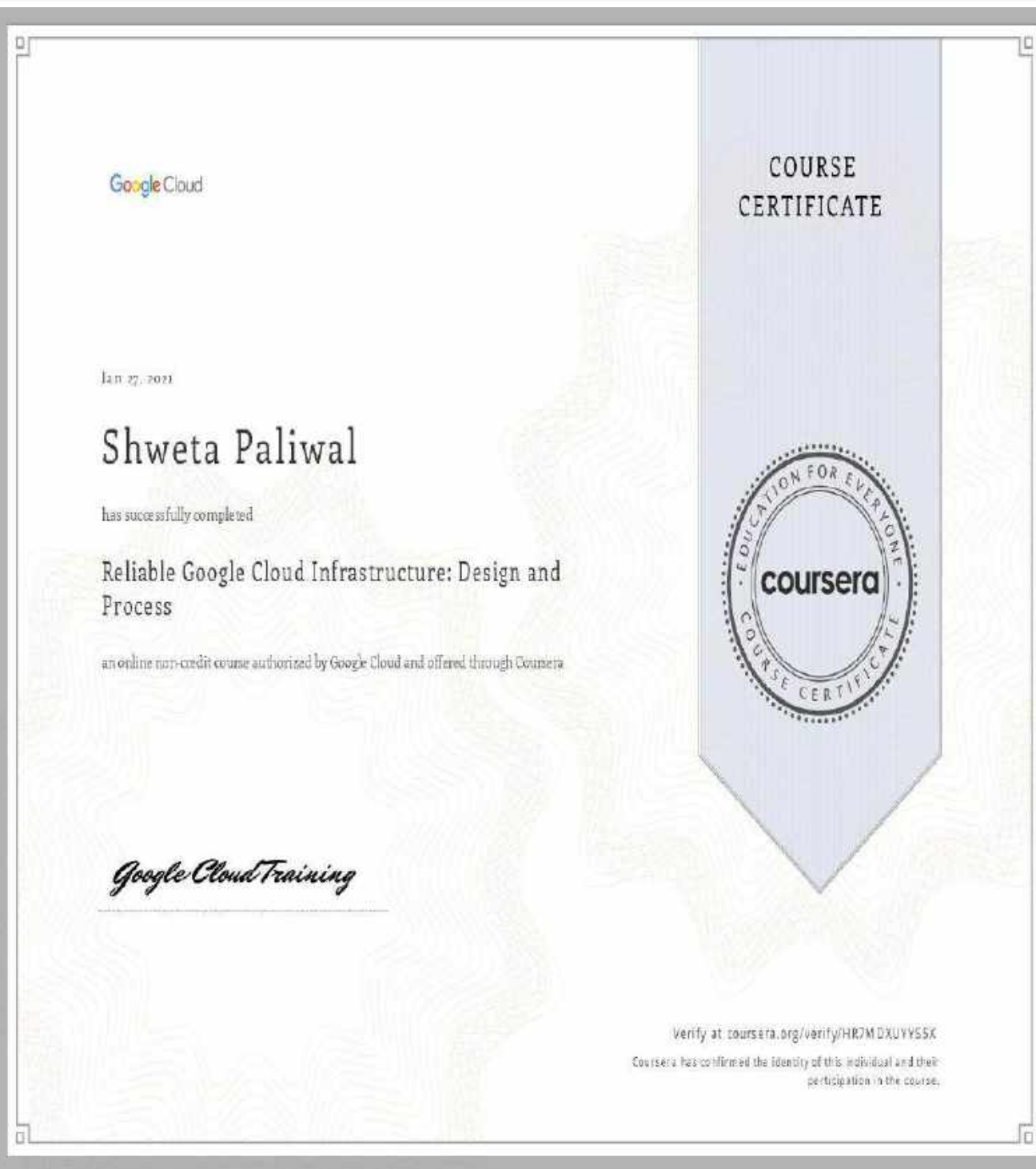
COURSE
CERTIFICATE

Verify at: coursera.org/verify/6RUKG8TQQ96G

Coursera has confirmed the identity of this individual and their
participation in the course.



Faculties Achievement





Faculties Article

टेंसरफ्लो (GOOGLE TENSORFLOW) का वर्णन और वास्तविक जीवन में इसके उपयोग के मामले

Google TensorFlow मूल रूप से एक मशीन लर्निंग लाइब्रेरी है, जिसका उपयोग Google खोज, जीमेल, भाषण मान्यता, Google फोटो इत्यादि जैसे विभिन्न Google उत्पादों को सीखने के लिए किया जाता है। हालांकि हम अभी भी मशीन लर्निंग टेक्नोलॉजी के शुरुआती अनुप्रयोगों की सराहना कर रहे हैं, लेकिन यह तेजी से विकसित हो रहा है, जो हमें अधिक उन्नत एल्गोरिदम और दीप लर्निंग जैसी शाखाओं में पेश करता है। दीप लर्निंग से तंत्रिका नेटवर्क (Neural Networks) के रूप में जाना जाने वाला एल्गोरिदम का उपयोग किया जाता है, जो जानकारी को संसाधित करने के लिए मस्तिष्क जैसे जैविक तंत्रिका तंत्र (biological nervous systems) से प्रेरित होते हैं। यह कंप्यूटर को जो भी दर्शाता है और पैटर्न सीखने के हर डेटा की पहचान करने में सक्षम बनाता है।

टेंसरफ्लो के मुख्य उपयोग के मामले-

1. आवाज / ध्वनि पहचान (voice/sound recognition)
 - आवाज पहचान (Voice recognition) - ज्यादातर आईओटी, मोटर वाहन सुरक्षा और वूक्स / यूआई में उपयोग की जाती है
 - वॉयस सर्च (Voice search) - ज्यादातर टेलीकॉम, हैंडसेट निर्माता में उपयोग की जाती है
 - भावना विश्लेषण (Sentiment Analysis) - ज्यादातर सीआरएम में उपयोग किया जाता है
 - दोष पहचान (इंजन शोर) (Flaw Detection (engine noise)) - ज्यादातर ऑटोमो में उपयोग किया जाता है

2. पाठ आधारित अनुप्रयोगों (Text Based Applications)

टेंसरफ्लो के आगे के लोकप्रिय उपयोग, पाठ आधारित अनुप्रयोग जैसे भावनात्मक विश्लेषण (सीआरएम, सोशल मीडिया), धमकी का पता लगाने (सोशल मीडिया, सरकार) और धोखाधड़ी का पता लगाने (बीमा, वित्त)

भाषा का पता (Language Detection) लगाने पाठ आधारित अनुप्रयोगों के सबसे लोकप्रिय उपयोगों में से एक है।

- हम सभी को Google अनुवाद पता है, जो एक से दूसरे भाषाओं में अनुवाद करने वाली 100 से अधिक भाषाओं का समर्थन करता है। विकसित संस्करणों का उपयोग कई मामलों के लिए किया जा सकता है जैसे शब्दकोश कानूनी भाषा को सादे भाषा में अनुबंध में अनुवाद करना।
- पाठ सारांशकरण (Text Summarization) Google ने यह भी पाया कि छोटे ग्रंथों के लिए, सारांश को अनुक्रम-से-अनुक्रम (sequence-to-sequence learning) सीखने वाली तकनीक के साथ सीखा जा सकता है। इसका उपयोग समाचार लेखों के लिए शीर्षकों का उत्पादन करने के लिए किया जा सकता है। नीचे, आप एक उदाहरण देख सकते हैं जहां मॉडल आलेख पाठ पढ़ता है और एक उपयुक्त शीर्षक लिखता है।



Faculties Article

• एक और Google उपयोग केस SmartReply है। यह स्वचालित रूप से ई-मेल प्रतिक्रिया उत्पन्न करता है (इस के विकसित संस्करण की इच्छा हमारे लिए हमारी ओर से कर रहा है)

3. छवि पहचान (Image Recognition)

न्यायांतर सोशल मीडिया, टेलीकॉम और हैंडसेट निर्माता द्वारा उपयोग किया जाता है, ऑटोमोटिव, एविएशन और हेल्थकेयर इंडस्ट्रीज में फेस रिकग्निशन, इमेज सर्च, मोशन डिटेक्शन, मशीन विजन और फोटो क्लस्टरिंग का भी इस्तेमाल किया जा सकता है। छवि पहचान का उद्देश्य छवियों में लोगों और वस्तुओं को पहचानना और पहचानना और सामग्री और संदर्भ को समझना है।

4. समय श्रृंखला (Time Series)

अर्थपूर्ण आंकड़ों को निकालने के लिए समय श्रृंखला डेटा का विश्लेषण करने के लिए टैंसरफ्लो टाइम सीरीज एल्गोरिदम का उपयोग किया जाता है। वे समय श्रृंखला के वैकल्पिक संस्करणों को उत्पन्न करने के अलावा गैर विशिष्ट समय अवधि की भविष्यवाणी करने की अनुमति देते हैं।

5. वीडियो डिटेक्शन (Video Detection)

टैंसरफ्लो तंत्रिका नेटवर्क वीडियो डेटा पर भी काम करते हैं। इसका मुख्य रूप से गेमिंग, सुरक्षा, हवाई अड्डे और यूएक्स / यूआई क्षेत्रों में मोशन डिटेक्शन, रीयल-टाइम शूट डिटेक्शन में उपयोग किया जाता है। हाल ही में, विश्वविद्यालय बड़े पैमाने पर वीडियो वर्गीकरण डेटासेट पर काम कर रहे हैं जैसे यूट्यूब 8 एम बड़े पैमाने पर वीडियो समझ, प्रतिनिधित्व सीखने, शोर डेटा मॉडलिंग, स्थानांतरण सीखने और वीडियो के लिए डोमेन अनुकूलन दृष्टिकोण पर अनुसंधान को तेज करने के उद्देश्य से।

• चूंकि टैंसरफ्लो एक ओपन सोर्स लाइब्रेरी है, हम जल्द ही कई और अधिक अभिनव उपयोग मामलों को देखेंगे, जो एक-दूसरे को प्रभावित करेंगे और मशीन लर्निंग टेक्नोलॉजी में योगदान देंगे।

भावना शिल्डियाल

सहायक प्रोफेसर

एम.आई.एटी मेरठ





Faculties Article

Security Issues and Challenges in MANETs

Mobile ad hoc networks are becoming very popular due to its low deployment cost and more flexible network access services to various portable devices such as personal digital assistants (PDAs), laptops, mobile phone, notepads etc. Such devices are driving a revolutionary change from personal computing to ubiquitous computing age. These devices take advantage of wireless communication and have encouraged and attracted researcher to do research activities in wireless networking technology in the last decade. These devices are an essential part of everyday life. Many crucial services like banking, health, shopping, transport, and data communication are partly or completely dependent on the Internet. At the same time, different kind of malicious anomalies in the network are introduced by various kinds of attacker. As a result, the field of network security has become an active area of research nowadays as it provides different mechanism to protect and safe guard networks from various kinds of attack and monitor unauthorized access, misuse and denial of service attack to various network resources. A wireless mobile ad hoc network(MANET) is a collection of self-configuring nodes deployed in an ad hoc manner. These selfmoveable nodes communicate with each other in single hop as well as in multi-hop manner without the aid of any centralized administrator or established infrastructure. Because of unrestricted mobility and connectivity to the users, the liability of network management entirely depends on the mobile nodes which form ad hoc network. Multi-hop communication is needed due to a limited transmission range of wireless ad hoc network. The success of communication highly depends on the cooperation of intermediate nodes. In such networks, each mobile node works as host as well as a router to find an optimal path in different routing approaches of MANETs. Ad hoc networks can be deployed in a wide range of applications such as vehicular networks, disaster relief areas, home and office networks, networks at construction sites and other temporary installations connecting organizations and hospitals, conventions, networks for users at shopping malls and airports etc.

The security in computer networking is very crucial aspect because any disruption in network operation can be very inconvenient for most of us. Network security attacks are handled by intrusion detection systems and firewalls. These are designed to address detection and prevention, mitigation, and response perspective to security attacks. Therefore, the fundamental motivation of the research described in this article emerges from realizing the need to secure mobile ad hoc networks from a wide variety of attacks. Attacks from intruder or



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malicious nodes cause different degrees of damage to the network depending on the type of attack launched. Due to such attacks, performance of routing protocol in MANET degrades in terms of packet delivery ratio (PDR), routing overhead, end-to-end delay and throughput. This is especially true for reactive routing protocols since they are more widely used. It is also our view that not only detection of these attacks is required, but also there is a need to identify the intruding nodes and develop strategies to mitigate the damages caused by these attacks and ultimately preventing such attacks. In addition, it is imperative to consider operational feasibility of any proposed security mechanism by recognizing the constraint of MANETs such as their limited processing ability and lack of centralized control. A substantial research effort has already been made to secure MANETs. Several examples can be found in literature, where various routing attacks are analyzed and then proposals are made to detect these individual attacks. However, our view in this article is that most of the work described previously in the literature has focused on detecting and preventing a single attack; but very few have suggested a generalized approach that can protect against a variety of attacks.

We consider that security is a major challenge for MANETs as there is no central administration or control to monitor and identify attacks or activities that compromise security of a network. We also note the lack of extensive research on mechanisms with the capability to detect and prevent a wide range of possible attacks in MANETs. The network operations can be easily jeopardized if security solutions are not embedded into basic network functions at the early stages of their design. Data and network services in such networks are highly vulnerable to various security attacks such as SYN flooding, blackhole, wormhole, gray hole and rushing attacks etc. Designing a security protocol for ad hoc network is a very difficult task due to certain unique characteristics of ad hoc wireless network, namely, shared broadcast medium, insecure operational environment, lack of central control, lack of association among nodes, limited availability of resource and physical vulnerability. Therefore, in our opinion, further research is needed on mechanisms that can safeguard MANETs against a wide variety of attacks effectively.

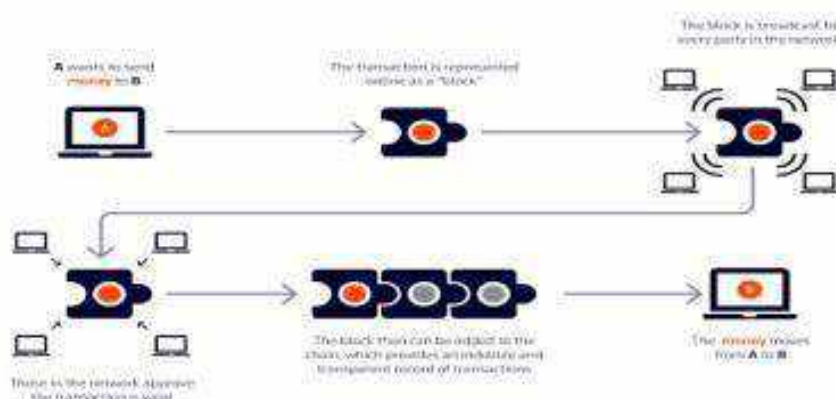
Dr. Vinod Kumar
Associate Professor



Faculties Article

HOW TO BE A BETTER BLOCKCHAIN DEVELOPER

Blockchain being revolutionary it opened up a new field of development called Blockchain Development. Thus, has created numerous job opportunities for developers and technicians. Let's first discuss how Blockchain works



Blockchain is a public ledger stored on the internet. It is comparable to digital database that records **transactions made by digital assets** and can't be change or corrupted.

There are majorly three principal technologies that create Blockchain: Firstly **Private Key cryptography**, this serves for purpose of security. Next comes a **distributed network**, this is the shared ledger that regulates transactions to eliminate fraud and tax evasion. And then the **Incentives**, rewards for "mining" companies to service Blockchain and ensure security levels are maintained.

A Blockchain can be private, public, permission-based, centralized or decentralized.

Basically any developer that is involved in Blockchain Technology can be tagged as Blockchain Developer.

"A Developer responsible for developing and optimizing Blockchain protocols, crafting the architecture of Blockchain system, developing web apps based on Blockchain technology is Blockchain Developer".

Following should be the **Roles of Blockchain Developer**: First of all a solid understanding of coding is imperative for Blockchain developer. Secondly, Developer is responsible for update and maintains security measures using Blockchain. Third, Developer will be tasked with managing online resources about the demands of the network. Fourth, Developer will be asked to develop a crypto currency that outcome your rivals. Lastly, Developers that use to mine crypto currencies are responsible for creating a hash.

There are two types of Blockchain Developers namely, Core Blockchain Developers: it handles the design architecture, design, security of Blockchain Technology. He design Blockchain protocols, design security patterns for the network, network architecture and supervision of entire network.



Faculties Article



Blockchain Software Developers: it uses the architecture to build Blockchain applications.

He develop smart contracts, interactive front-end design for Dapps, backend development pertaining to Blockchain, supervision of the entire stack running their Daaps.

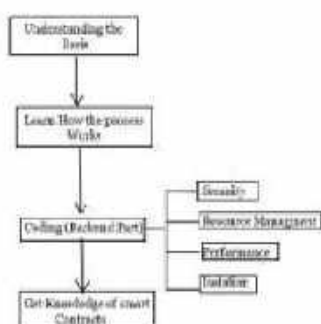


A Blockchain developer must have the following skills-

First the **Blockchain Architecture**; It should have a great knowledge of Blockchain architecture and its working. Aware of technologies like cryptographic hash functions, distributed ledger technology. Secondly **Data Structures**; it should have great knowledge and applicative sense of data structures. Concepts like merkle trees, pretrecia trees etc. Knowledge about Blockchain without the knowledge of Data Structures is incomplete. Third **Cryptography**. As Blockchain is the conjunction of Data structures and Cryptography; hence it is obvious that a good grasp on cryptography is also required to be a Blockchain Developer. Next is the **Smart contract development**. Now, every Blockchain tries to incorporate smart contract functionality into its system so that business logic can be easily applied on the Blockchain. Last the **Web Development**. Web development is the core aspect of Blockchain developer. When a person begins his career as Blockchain Developer in the industry, majority of them are employed with basic designing of the decentralized applications. Learning steps for Blockchain.



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Companies Hiring Blockchain Developers:

So if you are thinking if you have what it needs to be a Blockchain Developer then it's pretty good time for you because opportunities are thriving. Many fortune companies like IBM, Capgemini, Accenture and more are on the hunt for eligible Blockchain Developers.



A Core Blockchain Developer nowadays makes \$100,000 and Blockchain Developer makes \$70,000 per annum.



Ms. Anjali Sharma
Assistant Professor



Faculties Article

ब्लॉकचेन टेक्नोलॉजी: बदलती तकनीक से करें फ्यूचर सिक्थोर

ब्लॉकचेन एक नई किस्म की तकनीक है, जो बैंकिंग सिस्टम में क्रांति ला सकती है। इसे परंपरागत बैंकिंग व्यवस्था का विकल्प माना जा रहा है। क्योंकि आजकल बैंकिंग बड़ी असुरक्षित हो गई है। आए दिन स्पैम, हैकिंग की घटनाएं हो रही हैं। वित्तीय लेनदेन के लिए यह बेहद सुरक्षित और प्रामाणिक तकनीक हो सकती है, जिसमें धन का हस्तांतरण तुरंत होता है और इसमें किसी तरह की हैकिंग या फ्रॉड होने का भी खतरा नहीं होता। इससे आरबीआइ जैसे संस्थानों के सामने चुनौती है कि उनका डाटा कहीं हैक न हो जाए। इस मामले में ब्लॉकचेन बहुत ज्यादा सुरक्षित माना जाता है। इसकी डिमांड कई कारणों से है। पहली बात तो यह है कि इसके अंदर जो सुरक्षा है, वही मुख्य है। ब्लॉकचेन में जो डाटा जाता है, वह पूरी तरह सुरक्षित होता है, उसे हैक नहीं किया जा सकता। सबसे अच्छी बात है कि यह तकनीक सिर्फ बैंकिंग में ही नहीं, कई अन्य क्षेत्रों में भी इस्तेमाल की जा सकती है। मिसाल के तौर पर ई-गवर्नेंस, शिक्षा आदि के क्षेत्र में। ऐसे में जो लोग इस सिस्टम को समझ सकते हैं और इसमें प्लेटफॉर्म डेवलप कर सकें, उनकी बहुत जरूरत है। युवाओं के लिए यह बहुत बड़ा अवसर है, जहां अभी कोई कॉम्पिटिशन नहीं है। अभी सबसे ज्यादा अवसर उन बैंकिंग संस्थानों में है, जो अपने सिस्टम को ज्यादा सिक्थोर बनाने की सोच रहे हैं।

ब्लॉकचेन के बढ़ते इस्तेमाल को देखते हुए अनुमान है कि 2022 तक ब्लॉकचेन से जुड़े प्रोडक्ट और सर्विसेज का मार्केट करीब 7.7 बिलियन यूएस डॉलर तक पहुंच जाएगा। ब्लॉकचेन में संभावनाओं को देखते हुए सरकार भी इस तकनीक के संभावित इस्तेमाल के लिए इसे समझले पर काफी जोर दे रही है। नीति आयोग ने इसके लिए बकायदा इंडियाचेन नाम से एक पॉयलट प्रोजेक्ट शुरू किया है। इसी तरह किप्रोकरैसी में लेनदेन अभी देश में अमान्य है, लेकिन आगे चलकर अन्य देशों की तरह अगर भारत में भी इस लेनदेन को कानूनी मान्यता मिल गई, तो इस क्षेत्र में भी बड़ी तादाद में नौकरियां सामने आएंगी। जॉब के बिनाज से दुनिया में जिन 20 स्किल्स की इन दिनों सबसे अधिक मांग है, उनमें ब्लॉकचेन टेक्नोलॉजी दूसरे नंबर पर है।



Faculties Article

जॉन्स के मौके

ब्लॉकचेन टेक्नोलॉजी जानने वालों के लिए अभी सबसे अधिक मौके सॉफ्टवेयर/आईटी कंपनियाँ, फाइनेंशियल सर्विसेज एवं इन्शोरेंस तथा क्रिप्टोकॉर्सेस एक्सचेंज के क्षेत्र में हैं। इसके अलावा, साइबर सिक्योरिटी, सप्लाइ चेन मैनेजमेंट, कैपिटल मार्केट्स, इंटरनेट ऑफ थिंग्स, गवर्नमेंट डिपार्टमेंट, हेल्थकेयर, एनर्जी मैनेजमेंट जैसे क्षेत्रों में आने वाले दिनों में नौकरियाँ बढ़ने की संभावना है। पीडब्ल्यूसी की एक रिपोर्ट की मानें, तो करीब 56 फीसदी भारतीय बिजनेस कंपनियाँ ब्लॉकचेन तकनीक को अपने कोर बिजनेस में शामिल करने में दिलचस्पी ले रही हैं यानी आगे चलकर और भी सेक्टर में इसके इस्तेमाल से नौकरियाँ बढ़ेंगी। ब्लॉकचेन की मांग को देखते हुए दुनियाभर की यूनिवर्सिटीज के पाठ्यक्रमों में इसे जोड़ा जा रहा है। जाहिर है, शैक्षणिक संस्थानों में टीचिंग के लिए भी इन जानकारों की आवश्यकता होगी। अमेरिका, ऑस्ट्रेलिया, चीन, सिंगापुर जैसे देशों में ब्लॉकचेन के जानकारों की आजकल काफी डिमांड है।

RAGHURAJ SINGH

Assistant Professor

MIET, Meerut.





Faculties Article

कंप्यूटर युग में डाटा साइंस का महत्व

आज हम जिस युग में रह रहे हैं वह विज्ञान का युग है। हर किसी के जीवन में काम आने वाली सभी चीजें तेज़ी से डिजिटलाइजेशन की ओर बढ़ रही हैं जिसमें डाटा साइंस की महत्वपूर्ण भूमिका है। 2012 में हार्वर्ड विश्वविद्यालय की लोकप्रिय पत्रिका "हार्वर्ड बिजनेस रिव्यू" के समीक्षा मूलांकिक डाटा साइंस अनुसंधान के लिए एक नया और महत्वपूर्ण विषय है जो इंजीनियरों के लिए सबसे दिलचस्प नौकरियां प्रदान करने के लिए जाना जाता है। आज अधिकांश डाटा असंगठित या अर्ध-संगठित है और 2020 तक, 80% से अधिक डाटा असंगठित हो जायेगा। कृषि, अस्पतालों, बैंकिंग, बीमा कंपनियाँ, स्वचालन, सोशल मीडिया जैसे प्रत्येक डोमेन बड़ी मात्रा में डाटा उत्पन्न कर रहे हैं। डाटा साइंस इस डाटा को एक अर्थ देने के बारे में है। डाटा साइंस डाटा से उपयोगी जानकारी प्रदान करता है। इसका उपयोग बिजनेस विश्लेषण, बिजनेस इंटेलिजेंस, पूर्वानुमानित विश्लेषण और आंकड़े लेने में होता है। डाटा वैज्ञानिक वे व्यक्ति हैं जो अंतर्दृष्टि प्राप्त करने और डाटा उत्पाद बनाने के लिए राबडेटाबेस स्तर पर काम करते हैं। डाटा वैज्ञानिक के पास आंकड़ों के बारे में अच्छी जानकारी होनी चाहिए और व्यवसाय की समस्या का गहरा ज्ञान होना चाहिए क्योंकि वह मौजूदा बाजार परिदृश्य को देखने और कोर बिजनेस समस्याओं को हल करने के लिए रणनीतियों को विकसित करने के लिए जिम्मेदार है। विश्लेषक अंतर्दृष्टि प्राप्त करने के लिए डाटा को देखते हैं। विश्लेषक डाटा को समझते हैं और कुछ विश्लेषण के अनुसार रिपोर्ट उत्पन्न कर सकते हैं। डाटा साइंस आजकल सभी सर्वे इंजिन्स जैसे की गूगल, याहू, बिंग, अदि में इस्तमाल किया जा रहा है और गेमिंग सॉफ्टवेयर में जिसमें कंप्यूटर प्रतिद्वंद्वी की चाल का विश्लेषण करता है और तदनुसार ऐसा लगता है जैसे मनुष्य खेल रहा है। इसके अतिरिक्त हेल्थकेयर में हार्ट और श्वसन रोगों का पता लगाने में और ट्रैक करने के लिए हार्ट रेट, नींद के पैटर्न, रक्त ग्लूकोज, तनाव के स्तर और यहां तक कि मस्तिष्क गतिविधि जैसे डाटा एकत्र करने में काम आता है। वेबसाइटों और मोबाइल अप्लिकेशन्स में भी उत्पादों के बारे में सुझाव प्रदान करने के लिए डाटा साइंस का उपयोग किया जाता है। डाटा साइंस में मार्केटिंग, फाइनेंस, ट्रेवल एजेंसी, धोखाधड़ी का पता लगाने, सरकारी एजेंसियां इत्यादि जैसे अन्य क्षेत्रों को भी शामिल किया गया है।

Ms. Surbhi Jain
Assistant Professor



Faculty Article

AUGMENTED AND VIRTUAL REALITY

It is a known fact that the field of computer science has endless possibilities and one great example is discovering the new realities beyond what we see around us. Two of such emerging realities are augmented reality and Virtual reality. Augmented reality is a technology that lets a digital image superimposed on user's view of the real world to generate a composite view. Suppose a person is wearing augmented reality eyeglasses and he is looking at a hotel, then the glasses can give him information about hotel like rent, meal price, availability and user ratings from the internet displaying directly on his glasses. The augmented reality gadgets can be quite handy like displaying real-time routes information, distance, notifications etc on the windshield of a car and in critical situations, augmented reality applications can deliver real-time information to the treatment area to support diagnosis, surgery and treatment plans. It can also be used in industries and device-repairing centres for real-time diagnosis with proper solution and not to mention the applications of augmented reality in entertainment like the popular mobile game "Pokémon GO" which has been downloaded million times generating revenue in billions.

Virtual reality on other hand is the complete digital reality that can be experienced by a VR enabled gadget like Oculus Rift, Samsung's Gear VR, and Microsoft's HoloLens etc. Even though the two terms 'Virtual' and 'Reality' are contradictory to each other as 'Virtual' means 'not real' and 'Reality' means 'real'. Virtual reality is a technological term for an interactive digitally generated experience within a simulated environment incorporating auditory and visual feedback. Virtual reality has plethora of applications like in military for flight and battlefield simulation, in medical for surgery simulation, in education for designing and studying components, in entertainment for gaming and interactive movies along with virtual tours, vehicle-learning simulations and many more. The only major difference between augmented reality and virtual reality is that augmented reality is a composite reality made up of digital or virtual reality and the real life reality while virtual reality does not consider real life reality rather it is a different digital reality completely separated from the outer world. It is obvious that these augmented and virtual realities seems futuristic and these were only seen in science-fiction movies a decade ago but the exponential development in the field of technology made it possible for us to experience these realities in a very short span of time and who knows what more is to come in the imminent future.

Ms. Swati Jain (Assistant Professor)



Students Article

Big Data- A Blooming World

Big data- depicts the huge volume of data. It can be examined for awareness that results in better decisions and tactical dealing moves. It is an emerging area in all aspects like business and industry that comprises the quick expansion of Internet and Cloud Computing that have resulted in the unpredictable growth of data. Big data is now days emerged as a hot topic that allures broad concentration from academic circles, production, and governments around the globe. In this article, we first momentarily introduce the term big data explaining its features and criterion along with its values.

Big data has hastily enhanced into a hotspot that has allured great attention from academic world, production, and even governments around the globe (Thomson et al., 2014). Based on inclusive viewpoint, big data can be regarded as a bond that delicately connects and inculcates around the cyber world. Physical world reflects the cyberspace, personified as big data that comprises the quick expansion of Internet and Cloud Computing that have resulted in the unpredictable growth of data. Big data generated by Human society is generally based on mapping in cyberspace by using various tools like human computer interfaces, brain-machine interfaces, and mobile Internet. It can fundamentally group into two categories, namely, data from the physical world, and data from the human society. Data from the physical world is generally through sensors, scientific experiments and observations whereas data from the human society is endorsed by social networks, Internet, well being, economics, financial side, and shipping.

It can be illustrated in terms of velocity, variety, variability and volume. The size of big data is continuously rising; presently it is ranging from a few dozen terabytes (TB) to many petabytes (PB) of data in a single data set. Difficulties like capturing of data, storage, hunt, involvement, analytics, and visualizing . Massive sample size and high dimensionality characterize many contemporary datasets. Big Data give rise to the two goals namely for exploring the hidden structures of each subpopulation of the data, which is traditionally not feasible and might even be treated as 'outliers' when the sample size is small and the other is extracting important common features across many subpopulations even when there are large individual variations. (Fan et al., 2014). The analytics tools used to store big Data can predict outcomes precisely, thereby, allowing businesses and organizations to make better decisions, while simultaneously optimizing their operational efficiencies and reducing risks. Being accurate, it integrates significant data from numerous sources to generate highly



Students Article

actionable insights. Not only in IT Sectors but it creates an enormous difference in the healthcare sector, academic word, banking, genome, neurosciences, etc.

Big Data is eventually leads to an area that encompasses a huge amount of information and also the raw data from which the information has been procured. As the term itself named "big Data" it gathers, stores, manipulates data at large scale synchronising it with cloud computing. It has even become an important factor for organizations to divulge concealed information and accomplish economical benefits in the market. Though it is a huge data therefore organizations faced many challenges like storage issues, analytical error, reporting problems, etc while handling it. Applications of big data provide novel opportunities to develop new acquaintance. It is now emerging as a need of every sector to for achieving the exponential growth. Through cloud computing it is now become easier to retrieve the data through the clients. It act as backup for storing large amount of data of multiple clients in same format. It is more valuable as well as reliable.

AYUSH VERMA
CSE IV SEM



Students Article

CRYPTOCURRENCY

A crypto currency is a virtual or digital currency that is secured by cryptography, which makes it nearly impossible to counterfeit. many cryptocurrencies are decentralized networks based on blockchain technology- a distributed ledger enforced by a disparate network of computers. cryptocurrencies are systems that allow for secure payments online which are dominated in terms of virtual "tokens" which are represented by ledger entries internal to the system.

TYPES OF CRYPTOCURRENCIES

- Bitcoin (launched in 2009 by Satoshi Nakamoto)
- Litecoin
- Ethereum
- Cardan

ADVANTAGES

- Crypto currency makes the funds transfers easier between two parties without the need of the third party like bank.
- Unlimited possibilities of transaction-each of the wallet holders can pay to anyone, anywhere and any amount.
- Transparency-the blockchain keeps information about every thing. so if the company has publicly used the BTC address, then anyone can see how much BTC is owned.
- Speed of transaction-the ability to send money anywhere and to anyone is a matter of minutes after the BTC network will process the payment.
- Anonymity it is completely anonymous and at the same time fully transparent. any company can create an infinite number of bitcoin addresses without reference to name, address, or any other information.

DISADVANTAGES

- It is possible to lose your virtual wallet or delete your currency.
- Vulnerable to cyber attacks cryptocurrencies exchanges are vulnerable to cyber attacks, which could lead to an irreparable loss of your investment.
- Vulnerable to scams-cryptocurrency can be vulnerable to scams. scammers often use platforms like facebook, instagram and twitter to trick people into these investments.
- Scalability as the number of digital coins and adoption is increased rapidly, it is still dwarfed by the number of transactions that payment giant, VISA, processes each day.



Students Article

- No uniformity in laws-there is no uniformity in laws regarding cryptocurrencies, every country has its own law and method of dealing with these virtual currencies.

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