



## REPORT

### AICTE SPONSORED FIVE DAY ATAL FDP

On

**DATA ANALYTICS AND MACHINE LEARNING**

**(20<sup>th</sup> -24<sup>th</sup> September 2021)**

**Application ID: 164755858**

**Coordinator Name: Prof Subhash Chandra Yadav**

**Organized by: -**

**DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY**

**CENTRAL UNIVERSITY OF JHARKHAND, RANCHI, 835205**

# FIVE DAY FACULTY DEVELOPMENT PROGRAM

## AIM AND SCOPE

This Workshop aims to stimulate the intensity and need of Data Sciences among the teachers, research scholar from different parts of the country. An entire session will be available for participants to discuss individual problems with the experts. Data science is related to Data Mining, Machine Learning, Statistics and Artificial Intelligent. By the end of the program they will be able to understand about the topic and its real time implementation using various tools (Python, Weka, Orange etc.).

**Tenure:** - 20<sup>th</sup> -24<sup>th</sup> September 2021

**Sponsored by:** - AICTE Training and Learning (ATAL) Program, New Delhi, India

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## **A. Objectives**

The objective of the five days FDP was to organize deliverables on data analytics and machine learning in such a way that the learners from diverse computing and its applications background could garner the benefits of the lectures and the hands on session with procedural learning. The topics that helped organize the objectives are laid below:-

- 1. Introduction to Data Science*
- 2. Supervised Learning- Regression and Classification*
- 3. Deep Learning*
- 4. Introduction to Python and Hands-on Session on Various Machine Learning Techniques*
- 5. Hands-on Session on Video Object Classification*
- 6. Sentiment Analysis using Machine Learning Techniques*
- 7. Hands-on Session on Deep Learning using Keras + Tensorflow*
- 8. Hands-on Session on Video Object Classification*
- 9. Exploratory Data Analysis*
- 10. Impact of AI on Society*
- 11. Knowledge Acquisition Process of an Expert System*
- 12. Applications of Machine learning and AI*

## B. EMINENT SPEAKRS/RESOURCE PERSONS



Prof. A.K. Nayak

IIP, National Chairman Academic & Awards  
Committee-CSI and Director IIBM & ZHI

Prof. (Dr) A.K Nayak is immediate Past President of Computer Society of India with more than 31 years of experience in teaching, training, research in Computer Science, Information Technology and Management. He have participated in designing and implementation of Computer related Course curriculum for various Universities & Institutes, Authored and / or edited 21 books out of which 12 books are related to computer science and IT as well as Authored 81 Articles & Technical Papers, co-authored 43 papers, Edited 3 Newsletters & proceeding of 7 National Conferences & Seminars. Conducted more than 40 Executive Development Programmes for the Professionals of private & public sectors and also organized and / or participated in 65 National & International Conferences and Seminars. Presided, technical sessions and delivered key note address in many of them.



Mr. Gautam Hazari

Technical Director  
GSM Association  
London, UK

Gautam Hazari is the Technical Director at GSM Association which is based in London. He is insightful strategically driven technology leader with more than 20 years of robust experience in IT and Telecom Sectors. He works with the mobile operators around the world on Mobile Identity, 5G Securities, Cyber Security, Privacy, Blockchain and also with the extended industry, standards and regulatory bodies. He has been working in the telecom industry for the last 20 years on various domains including Identity, IoT, Charging and Payments, Security and other areas and holds patents on Identity and access control. He is a Blockchain enthusiast, a thought leader working with Industry players and speaks on making the digital world a safer place on various platforms around the world



**Prof. Pramod Kumar Mishra**

**Professor and Ex. Head**

**Department of Computer Science**

**IIT, Banaras Hindu University**

Prof. Mishra is a Ph.D. in Chemical Engineering, Institute of Technology, Banaras Hindu University, Varanasi, 1995 and M. Tech. in Chemical Engineering, with specialization in Petroleum and Coal, Indian Institute of Technology, Mumbai, 1988 as well as B.E., Chemical Engineering, University of Roorkee (IIT Roorkee), 1986. Prof Mishra has been on board with a lot of professional and research experience in the private and government sector like. DST Research Fellow, IIT Bombay; Consultant, Sigma Consultants Pvt. Ltd. Mumbai; SRF, IT(BHU), Varanasi; Research Scientist, Sangeeta Biotech, Kolkata. He has published more than 70 research articles in reputed journals of national and international importance and 4 books in field of computer science applications



**Mr. Pushendra Kumar**

**Assistant Professor**

**Department of Computer Science and Technology**

**Central University of Jharkhand, Ranchi**

Mr. Pushendra Kumar is an Assistant Professor in the Department of Computer Science & Technology at Central University of Jharkhand, Ranchi, India. He received the Bachelor and Master degree in Computer Applications from B.N.M.U Madhepura (Bihar) in 2011 and R.G.P.V Bhopal (MP) in 2014 respectively. He is pursuing Ph.D in Computer Applications from National Institute of Technology, Bhopal (MP). Mr. Kumar has published research work in various reputed journals. His area of interest includes Data Mining, Machine Learning and Deep Learning. He has published more than 5 research papers on reputed journals and two book chapters and more than 5 conference papers to his credit.



**Dr. Kanojia Sindhuben Babulal**  
Assistant Professor  
Department of Computer Science and Technology  
Central University of Jharkhand, Ranchi

Dr. Kanojia Sindhuben Babulal is an Assistant Professor in the Department of Computer Science & Technology at Central University of Jharkhand, Ranchi, India. She received her Ph.D in Computer Science in 2012 from University of Allahabad. Dr. Sindhu has published research work in various reputed journals. Her area of interest includes Energy Efficient Wireless Sensor Networks, MANETS, Cross Layer Designs, Opportunistic and Cooperative Routing, 5G , Computer Vision. She has published about 20 journal articles and more than 15 conference papers to her credit.



**Prof. Dilip K. Yadav**  
Professor  
Department of Computer Applications  
NIT Jamshedpur

Prof Yadav is a Ph. D from IIT Kharagpur and M. Tech (CAD/CAM) NIT Jamshedpur as well as B. Tech (Mechanical) from NIT Jamshedpur. His areas of Research are Software Reliability, Software Security and Safety, Software Engineering, Soft Computing and Reliability Engineering. He has more than 10 PhD scholars supervised and published more than 50 research articles in various national and international journals. He is a member of professional bodies CSI, ISTE, IAENG.



**Prof. Sanjay Kumar Singh**  
Professor & HoD and Chairman JEE (Advanced)  
Department of Computer Science and Engineering, IIT, BHU

Prof. Singh's area of interest spans from Image and Video Processing, Pattern Recognition, Machine Learning, Deep Learning, Data Science, Medical Imaging, Quantum Neural Networks to Biometrics. He is a Ph.D. (Computer Science and Engineering) M. Tech. (Computer Applications) and B. Tech. (Computer Engineering). He is a Certified Novell Engineer (CNE) from Novell Netware, USA, Certified Novell Administrator (CNA) from Novell Netware USA. He is also member of professional bodies Institute of Electrical and Electronics Engineers (IEEE), Senior Member Association for Computing Machinery (ACM), Member, Computer Society of India (CSI), Life Member Indian Society for Technical Education (ISTE). He has more than 90 research publications in journals of national and international repute and also published around 20 book chapters. He has also published more than 5 patents and guided over 20 PhD scholars under his credit. He has led more than 4 sponsored projects.



Dr Kh Robindro Singh

Assistant Professor

Department of Computer Science,  
Manipur University

Dr. Singh specializes in Artificial Intelligence, Expert System, Data Structures, Object Oriented Programming System. He has more than 5 research publications to his credit. Dr. Khumukcham Robindro was born on April 9, 1979 at Kakching Khunou Hijam Sana Khongnang Leikai, Manipur. He is currently working as an Assistant Professor in the Department of Computer Science, Manipur University. He joined Department of Computer Science, Manipur University as Assistant Professor on 5th November, 2014. Dr. Khumukcham Robindro got his MCA Degree from Manipur University in the year 2007 after which he continued his research work at Gauhati University and got his Ph.D. Degree in the year 2013.



Dr. Dharmendra Singh Rajput

Associate Professor

School of Information Technology and  
Sciences

Vellore Institute of Technology

Dharmendra Rajput has a Ph.D. (January 2015) in the area of Document Clustering from National Institute of Technology Bhopal, India. He has 9+ years' experience in teaching, research, and industry field. Currently, he is working as an Associate Professor in School of Information Technology & Engineering, VIT University, Vellore (India). He has published 10+ reputed journals papers and 12 papers presented in international conferences. He has visited four countries (i.e., Malaysia, UK, France, and UAE) to attend the various international conferences. He received various awards from Indian Government like DST, CSIR Travel Grant, MPCST Young Scientist Fellowship.



Mr. Abhishek Singh  
Director Operation  
Accenture  
New Delhi, India

Mr. Abhishek is a Senior Leader, IIM-A alumnus and certified Agile coach with 20+ years of experience and expertise in Digital Transformation, IT software/application delivery and operations in varied industry segments. Over the years, he has worked/working with reputed industry leaders such as BCG (Boston Consulting Group), PwC (PriceWaterhouseCoopers) , Accenture, IBM Global Services, Xansa (India)/Sopra Steria. Track record of leading and managing multimillion dollar global programs across global locations in sync with business and client/stakeholder expectations. Expertise in complete SDLC (software development life cycle) including Digital Transformation, business process re-engineering,



Dr. Ramjeet Singh Yadav  
Associate Professor  
AITM  
APJ Kalam Technological University, UP

Dr. Ramjeet Singh Yadav is a Associate Professor in the Ashoka Institute of Technology and Management Varanasi and has also worked in various institutions like Department of Business Management & Entrepreneurship, Dr. Rammanohar Lohia Avadh University. He is Experienced Computer Science Engineer with a demonstrated history of working in the higher education industry. Skilled in Lecturing, Curriculum Development, Software Development, Faculty



Development, and E-Learning. Strong engineering professional with a Ph.D. focused in Computer Science and Engineering from Sharda University. He has published around 17 research papers in various journals and conferences.



Dr. Chandra Mauli PVSSR  
Associate Professor and Head  
Department of Computer Science  
Central University of Tamil Nadu

Dr. P.V.S.S.R. Chandra Mouli is currently associated with Central University of Tamil Nadu, Thiruvavur. He is an Associate Professor in the Department of Computer Science. He is also heading the department. Prior to that, he was affiliated to N.I.T. Jamshedpur. Before that, he was Professor, School of Computing Science and Engineering (SCSE) VIT University, Tamil Nadu, India.

He obtained his Ph.D. degree from National Institute of Technology (NIT) Trichy in the area of Digital Image Processing. His Thesis title is "Studies on Image Segmentation using Some Concepts in Graph Theory and Other Approaches". His current research interests include Digital Image Processing, Computer Vision, Pattern Recognition, Computational Intelligence, Information Retrieval and Wireless Ad hoc Networks. Dr. Chandra Mouli executed two research projects sponsored by the Defence Research and Development Organization (DRDO), Ministry of Defence, Govt. of India during 2002-2004 and 2006-2008. He is currently guiding 8 Ph.D. scholars in various allied areas of digital image processing and ad hoc networks. He is a member of various professional bodies like IEEE, ISTE. He is also a reviewer and editorial board member for various reputed international journals and conferences.



Dr. Chandramani Sharma  
Assistant Professor  
Department of Computer Science and  
Engineering,  
UPES, Dehradun

Dr. Chandramani Sharma is a Associate Professor in the Department of Computer Science and Engineering, UPES, Dehradun. He is a M.Tech. and PhD in Computer Science and published more

than 14 articles in various reputed journals and conferences. He has a UGC sponsored project of around 10 Lakhs to his belt.



Dr. Prashant Prashun

Assistant Professor

Department of Computer Science and Technology  
Central University of Jharkhand, Ranchi

Dr. Prashant Prashun is working as an Assistant Prof. in the department of computer science and technology, central university of Jharkhand. He has obtained his PhD from Bournemouth University (2012), UK; in the field of computer science aimed at assistive technology product development in healthcare. He has his MSc in Systems Engineering from University of Glasgow, Scotland, UK. He has been the founder and senior scientist at Bipedhealth. He has worked as UK Practitioner for British Council China, Wellcome Trust, UK. He has led the healthcare technology team for Samsung, India and filed 4 patents in the field of computer science and communication.



Dr. Kamal Raj Pardasani

Professor

Maulana Azad National Institute of Technology  
Bhopal, India

Dr. Kamal Raj Pardasani is working as a Professor in Maulana Azad National Institute of Technology, Bhopal, India. He is B.Sc, M.Sc (Mathematics) and PhD (Mathematics: Computational Biology). He has more than 30 years of teaching and research experience and published more than 120 research articles in international and national journals and conferences. He is life member of various academies and institutions such as Life member, Indian Mathematical Society, Senior Life member, Computer Society of India, Life member Indian Society for Industrial and Applied Mathematics. He has received various awards and achievements to his credit e.g. Chairman, Work Group on Bioinformatics under Technical committee 5 of International Federation of Information Processing, a UNESCO body on IT Since may 2010, Member, Executive Committee, Technical committee 5 of International Federation of Information Processing, a UNESCO body on IT Since may 2010 (IT Application).

## C. Programme Schedule

Central University of Jharkhand, Ranchi-835205

Department of Computer Science and Technology

One Week FDP

on

Data Analytics and Machine Learning

20th -24th September 2021

### *Programme Schedule*

DATE	TIME	DETAILS
20-09-2021	09:00AM – 09:45 AM	INAUGURAL FUNCTION
	09:45 AM– 11:45 AM	Introduction on Data Analytic:Challenges and Issues in Data Analytics. (AKN)
	11:45-12:45 PM	BREAK
	12:45 - 02:45 PM	Fundamental of Data Science(PKM)
	02:45-03:00 PM	BREAK
	03:00 – 05:00 PM	Introduction to Machine Learning and Decision Tree Classifier with Hands-on Session (PK)

Dates	09:45 - 11:45 AM	11:45 to 12.00 PM	12.00 to 2.00 PM	02:00 to 3:00 PM	03:00 to 5.00 PM
21-09-2021	Genetic algorithm (KSB)	<b>Break</b>	Regression Analysis: Linear and Nonlinear Regression (DKY)	<b>Break</b>	Solving real life problem using Data Science (SKS)
22-09-2021	Classification using k-NN: A New Approach (KRS)		Sentiment Analysis using Machine Learning Techniques (DSR)		Rise of AI and data science: Impacting our daily life (AKS)
23-09-2021	Soft set based data analytics (RSY)		Auto Encoder in Deep Learning (CM)		Image Classification using CNN, RNN and LSTM with Hands-on Session (CS)
24-09-2021	AI in healthcare for the next centuries: (PP)		Soft set based models for Data Analytics & Machine Learning (KRP)		Feedback and Assessment

### Speaker Details:

**AKN:** Prof. A.K. Nayak, IIP, National Chairman Academic & Awards Committee-CSI and Director IIBM & ZHI

**PKM:** Dr. Pramod Kumar Mishra, Professor, Department of Computer Science, BHU, Varanasi.

**PK:** MR. Pushpendra Kumar, Assistant Professor, Department of Computer Science & Technology, CUJ, Ranchi.

**KBS:** Dr. Kanojia Sindhuben Babulal, **Assistant Professor**, Department of Computer Science & Technology, **CUJ, Ranchi**.

**DKY:** Prof. Dilip Kumar Yadav, **Professor & Head**, Department of Computer Applications, **NIT Jamshedpur**.

**SKS:** Prof. Sanjay Kumar Singh, **Professor**, Department of Computer Science & Engineering, **IIT BHU, Varanasi**.

**KRS:** Dr. Khumukcham Robindro Singh, **Assistant Professor**, Department of Computer Science, **Manipur University, Imphal, Manipur**.

**DSR:** Dr. Dharmendra Singh Rajput, **Associate Professor**, Vellore Institute of Technology, **Vellore, India**.

**AKS:** Mr. Abhishek Kumar Singh, **Director (operation) Accenture, New Delhi**

**RSY:** Dr. Ramjeet Singh Yadav, **Assistant Professor**, Dept. of Computer Application, Dr. Ram Manohar Lohia Avadh University, **UP**.

**CM:** Dr. Chandra Mouli, **Associate Professor & Head**, Department of Computer Science, **Central University of Tamil Nadu**.

**CS:** Dr. Chandra Mani Sharma, **Assistant Professor**, Department of Computer Science and Engineering, **UPES, Dehradun**.

**PP:** Dr. Prashant Prashun, **Assistant Professor**, Department of Computer Science & Technology, **CUJ, Ranchi**.

**KRP:** Prof. Kamal Raj Pardasani, **Professor**, Department of Mathematics, **MANIT, Bhopal**.


## D. Media Coverage

The five days FDP on Data Analytics and Machine Learning organized by the department of Computer Science and Technology, Central University of Jharkhand has been sponsored by AICTE, ATAL Academy, New Delhi. The media has been kind enough to publish the report in reputed newspapers like Prabhat Khabar e.t.c.



## तकनीक की कोई जाति, धर्म और सीमा नहीं होती : प्रो नायक

**रांची.** सीएसआइ के पूर्व अध्यक्ष व आल इंडिया बोर्ड इन आइटी एजुकेशन के सदस्य प्रो एके नायक ने कहा है कि तकनीक की कोई जाति, कोई धर्म और कोई सीमा नहीं होती है. तकनीक मानव जाति के विकास के लिए उपलब्ध है, जो दुनिया के लोगों को एक परिवार की तरह स्थापित करता है. प्रो नायक मंगलवार को केंद्रीय विवि, झारखंड (सीयूजे) के कंप्यूटर विज्ञान एंड टेक्नोलॉजी विभाग द्वारा डाटा एनालिटिक्स एंड मशीन लर्निंग पर आयोजित पांच दिवसीय कार्यशाला में बोल रहे थे. 24 सितंबर 2021 तक चलनेवाले इस कार्यशाला का आयोजन एआईसीटीई नयी दिल्ली द्वारा अटल योजना के तहत किया गया है. विवि के पूर्व कुलपति प्रो आरके डे ने कहा कि डाटा साइंस आधुनिक युग का एक अहम यंत्र और साधन है.

प्रभात खबर Wed, 22 September 2021  
<https://epaper.prabhatkhabar.com> 

# सीयूजे में डेटा एनालिटिक्स एंड मशीन लर्निंग पर पांच दिवसीय कार्यशाला का आयोजन

राष्ट्रीय सागर संवाददाता

**रांची :** केन्द्रीय विश्वविद्यालय झारखंड के कम्प्यूटर विज्ञान एंड टेक्नोलॉजी विभाग द्वारा सीयूजे में डेटा एनालिटिक्स एंड मशीन लर्निंग पर सोमवार से पांच दिवसीय कार्यशाला का आयोजन किया गया जो 24 सितम्बर तक चलेगी। यह कार्यशाला एआईसीटीई नई दिल्ली के द्वारा अटल योजना के तहत आयोजित की गई है, जिसमें देश के विभिन्न राज्यों से 200 प्रतिभागी भाग ले रहे हैं। इस कार्यशाला का उद्घाटन मुख्य अतिथि प्रो. एके नायक (पूर्व अध्यक्ष और फेलो - सीएसआई, सदस्य - आल इंडिया बोर्ड इन आईटी एजुकेशन और सलाहकार, आईआईबीएम और जेडएचआई), विशिष्ट अतिथि गौतम हजारी (टेक्निकल डायरेक्टर, जीएसएम एसोसिएशन, लंदन, यूके) एवं अध्यक्षीय उद्घोषण प्रो. आर के डे (पूर्व वीसी



(एक्टिंग) ने किया। आगंतुकों का स्वागत प्रो. एस.सी यादव (समन्वयक एवं विभागाध्यक्ष) ने किया एवं बताया कि यह कार्यशाला डेटा एनालिटिक्स एंड मशीन लर्निंग के अनुप्रयोगों एवं चुनौतियों के बारे में जानकारी प्रदान करने के लिए डिजाइन की गई है। प्रो. आरके डे ने कहा कि डेटा साइंस आधुनिक युग का एक अहम यंत्र और साधन है। इसकी उपयोगिता सिर्फ बिजनेस में ही नहीं अपितु हमारे व्यवहारिक जीवन में भी किया जा रहा है। प्रो. एके नायक ने कहा कि तकनीक की न कोई जाति, न धर्म और न कोई सीमा होती है। तकनीक मानव जाति के प्रोन्नति के लिए

उपलब्ध होते हुए दुनिया के लोगों को एक परिवार की तरह स्थापित किया है। प्रो. एके पाधी ने कहा कि डेटा एनालिटिक्स और मशीन लर्निंग का उपयोग बृहद् डेटा को संचालित करने में किया जाता है। श्री गौतम हजारी ने मशीन लर्निंग के विभिन्न प्रयोगों और उपयोगों में उसकी संलग्नता को विस्तार से बताया। इस कार्यशाला के पहले सेशन में प्रो. ए के नायक, दूसरे सेशन प्रो. प्रमोद कुमार मिश्रा, तीसरे एवं अंतिम सेशन में पुष्पेन्द्र कुमार व्याख्यान ने दिया। कार्यशाला संचालन डॉ. प्रशांत प्रसून किया और धन्यवाद ज्ञापन डॉ. कनौजिया सिधुबेन बाबुलाल ने किया।