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# A study on the impact of artificial intelligence on talent sourcing

**Varun Chand Hemachandran[1], Kurakula Arun Kumar[2], Syarul Azlina Sikandar[3], Seema Sabharwal[4], Sivaprakasam Arun Kumar[5]**
[1]Department of Computer Science and Engineering, College of Engineering Perumon, APJ Abdul Kalam Technological University, Kerala, India
[2]Department of Computer Science and Engineering, Sree Vidyanikethan Engineering College, Mohan Babu University, Tirupati, India
[3]Department of Liberal Arts, College of Creative Arts, Universiti Teknologi MARA, Selangor Darul Ehsan, Malaysia
[4]Department of Computer Science, Govt. P. G. College for Women, Kurukshetra University, Haryana, India
[5]Department of Computer Science and Engineering, Bethesda Institute of Technology and Science Engineering, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, India

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**ABSTRACT**

Talent sourcing is one of the most effective mechanisms to engage with the talent pool and convert a candidate into an applicant. Today, machine learning has emerged as a trend to assist employers in addressing recruitment challenges with the help of tools such as neuro-linguistic programming (NLP) and automated assessments. 80% of the executives strongly believe deep learning makes candidate screening highly efficient. Including current start-ups globally, only 15% use artificial intelligence (AI) and are expected to increase by 31%. The study focused on the impact of AI in recruitment process. There are a few metrics, such as application completion rate, number of candidates per filled position, cost per hire, and so on. Here we would like to analyze the impact of using AI in various phases of hiring in the organization.



***Corresponding Author:***

Syarul Azlina Sikandar
Department of Liberal Arts, College of Creative Arts, Universiti Teknologi MARA
40450 Shah Alam, Selangor Darul Ehsan, Malaysia
Email: syarul364@uitm.edu.my

## 1. INTRODUCTION

Artificial intelligence (AI) showcased its potential by silver lining its influence in making smart decisions and automating the redundant tasks to ease the struggle of job applicants in this technology-based ecosystem [1]. In addition to this, by considering the advantages of AI from the perspective of technology, the government also plays a vital role in implementing a road map for AI [2]. AI complements human capital management by digitizing the recruitment process and enriching how employees work [3], [4]. Nearly 30% of companies are changing their technology reasonably, and almost 90% are trying to prepare the workforce for the future [5].

Global leaders mine professional social sites and academic information from various sources and pinpoint the required talent pool for the desired position. Using multiple job posting channels and employee referrals are the key things used to source the candidate [6]–[8]. This study depicts how AI created a propelling impact in the hiring process and created a competitive advantage in the market, which helps create a tangible positive impact [9], [10]. The paper's purpose portrays how AI leveraged the selection process and paved the way to engage with the applicants in new ways.

AI paves a channel to engage the top talent and add value to the business. To manage the employment practices effectively, Bain and company opine that the hiccups lie in tapping the digital trend. Across nations, most employees believe that their performance can be very well optimized by digital technologies and bridge

talent acquisition gaps [11], [12]. The adoption helps us assess workforce planning and formulate a well-structured procedure to identify the metrics to ensure better performance and increase hiring accuracy. Recruiters are seeking talented individuals that can handle problems even in stressful situations. They must also be capable of making better decisions in a systematic way [13].

AI helps to cope with disruption and streamline the talent lifecycle in the age where the recruiter's ability is crucial in making better decisions to create business value [14], [15]. The capabilities of AI help in accurate assessments and facilitate better prioritization for job acquisitions. One of the most differentiated applications of AI in recruitment is sound compensation planning, where it optimizes the pay decisions and elevates transparency in the actual decision of managers.

AI builds momentum in hiring smarter candidates and focuses primarily on strategic planning [16], [17]. This AI application helps save time when the talent sourcing professionals can design key performance indicators to meet the business objectives and establish a core competence at the organizational level. Apart from all these features, it also gives us a new dimension to reducing employee attrition and helps formulate a strategy to address the pitfalls of high priority [18]. The main research objectives are i) to figure out the major applications of AI in talent acquisition, ii) to evaluate the core barriers to adopting AI in recruitment, and iii) to study the potential drawbacks associated with implementing AI in hiring. The study focused on how AI can be used in talent sourcing.

## 2. RESEARCH METHODOLOGY

As part of our research study, we conducted both primary and secondary research to analyze the impact of AI on hiring candidates. Accordingly, various newspapers, company blogs, official sites, and articles by leading consulting firms have been considered to draw these conclusions. Primary research was carried out to find out the potential of AI from screening to onboarding in talent acquisition and how it enhances the employer's brand. It was done by surveying through an online questionnaire.

To achieve the mentioned objective, we had the following research design. The sample size includes 1,000 respondents, including undergraduates/Postgraduates, working professionals, and homemakers, ranging from 20 to 60. We chose age and gender as our segmentation variables in terms of segmentation. Moreover, we used various tools such as bar graphs, pie charts, and line charts to pursue a detailed analysis of the obtained responses. The research methodology is purely based on the facts and insights that we collected through secondary research and the responses we received through the questionnaire as part of primary research. The dependent variables are professional skills and academic qualifications, while the independent variables are age and gender.

Profile of the target sample, we included males and females of an age group ranging from 20 to 60, where the sample size comprises students, working professionals, and homemakers. Source of the data, primary research: Sample size of 1,000. Secondary research: newspapers, official sites, blogs, and articles published by consultingfirms. Period of the study, this study was conducted for a month (On March 2022).

### 2.1. Secondary research

AI stands as a bedrock in establishing ethical human resource systems to ensure the bias factor is addressed and helps implement efficient performance measures to fine tune the accuracy of the hiring process [19]–[21]. In addition to this, AI provides accurate predictions and helps recruitment heads and hiring professionals to identify the potential candidates. AI mines candidates' facial expressions and body language to get good insights that help match people as per the requirement [22], [23]. AI-based systems are used for evaluating the applicant's resume. It will identify the keywords present in the applicant's resume which the recruiters are looking for. AI-enabled systems are unbiased in shortlisting the right applicants. It can also detect fraudulent applications [24], [25].

AI drives the hiring activity with the advent of technology and rived job opportunities, facilitating the acute challenge of employment shortage globally [26], [27]. Data-driven businesses evolved, and employee retention became a great challenge to resolve [28]–[30]. Implementing AI in the organization enables talent acquisition leaders to fuel the hiring process by automating specific repetitive jobs. The candidate's facial expressions can be used for assessing the honest answers using an AI-enabled system. So, this online interview creates convenience for both applicants and the interviewer's end [31], [32].

AI helps to trigger the individual's intellect and creates a compelling impact on attracting talent pool, development, and employee retention [33], [34]. It completely reshaped the traditional outlook and achieved good diversity among the employees. The beneficence of AI in the human resource function lies in crippling the typical barriers like reliability and bias and deriving very productive conclusions [35], [36]. The perceptions of workforce development can be phenomenally transformed with the use of AI in organizations.

### 2.2. Primary research: Primary data was collected with a sample size of 1,000

#### 2.2.1. The age groups

Figure 1 shows people from different age groups who have participated in this survey. Age groups ranging from 20-30 scaled up by 65.74%, followed by 31-40 who's percentage of participation is 28.8%. It is good to see that even age groups beyond 40 have expressed their opinion. According to the data, most respondents are male with 71%, followed by females with 29%, which is shown in Figure 2.

#### 2.2.2. Gender

According to the data, most respondents are male with 71%, followed by females with 29%. In other words, out of 1000 participants, 710 were male and 290 were female. The same is shown in Figure 2.

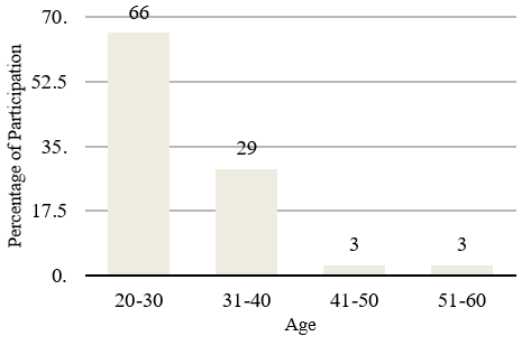


Figure 1. Age group

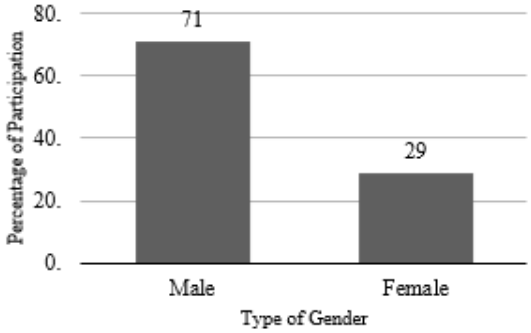


Figure 2. Gender

#### 2.2.3. Academic qualification/profession

Figure 3 shows the academic qualification/profession of the responders who has participated in this survey. As per the responses, postgraduates are more with 41%, followed by working professionals with 39%. It is also noticed that around 16% are graduates and remaining 4% are home makers.

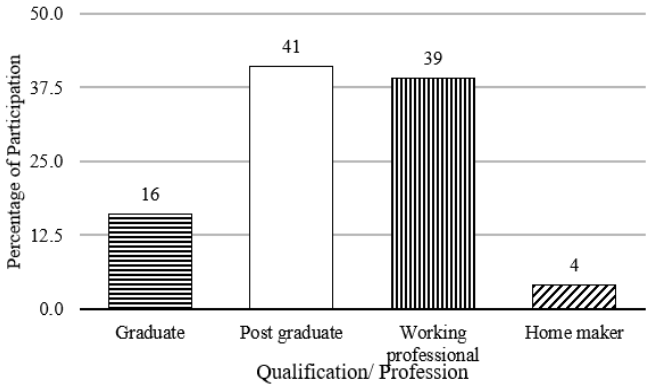


Figure 3. Academic qualification/profession

#### 2.2.4. Benefits of implementing AI in talent acquisition

Most of the respondents opined that implementing AI will reduce the man-hours in hiring, where the time can be utilized on associated tasks of high priority [37], [38]. In addition to that, respondents opine that the quality of candidates can be significantly improved, and recruitment can be done by optimizing the costs. Figure 4 shows the benefits of implementing AI in talent acquisition. Around 36% opined that implementing AI will be benefited in reducing the time to hire, while 27% opted that it will improve the quality of candidates. 23% opined that the implementation of AI helps in reducing the cost of hiring, while rest of 12% opined onboarding.

### 2.2.5. The major applications of AI in recruitment

Figure 5 shows the major applications of AI. The majority of the respondents opine that imparting AI to talent sourcing functions, social candidate discovery, and job market forecasting, followed by a screening of the candidates, can be done effectively. The mechanism to find talented candidates from an existing database is known as candidate discovery, which helps to reduce the cost and time of hiring for the organization [39]. Job market forecasting predicts future employment trends. The profession and its required skills along with the vacancy numbers are predicted [40], [41]. The skills required for the target position will be analysed from the resume. If matched, such resumes will be shortlisted [24], [42]. Around 25% responders mentioned that AI application is ingot market forecasting, while 24% mentioned each for social candidate discovery and resume filtering. It is also seen that 17% mentioned application in screening/assessments, while remaining 10% mentioned for reduced advertisement spend on recruitment.

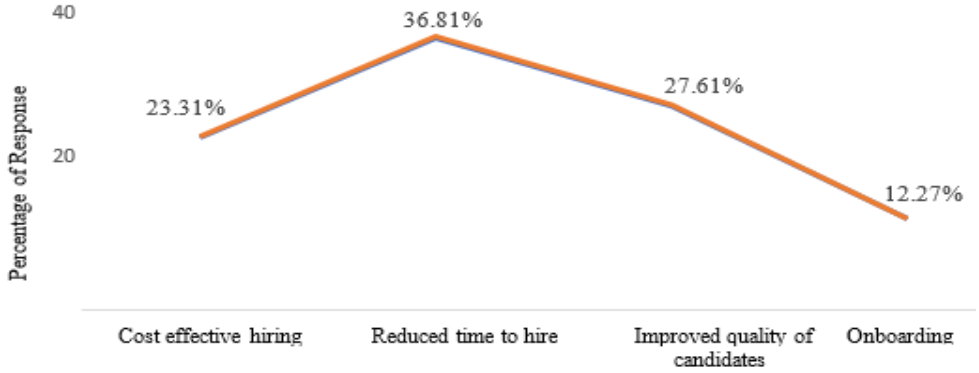


Figure 4. Benefits of implementing AI

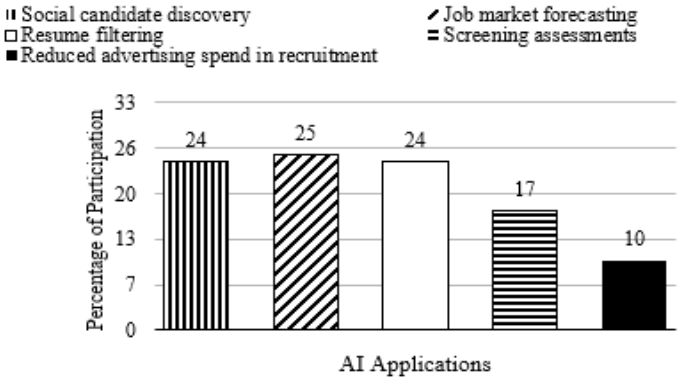


Figure 5. Major applications of AI

### 2.2.6. The core barriers to adopting AI in talent sourcing

Based on the data, people opine that lack of relevant skills to understand the pattern and flow of AI is the primary concern, followed by the inadequate budget are the core barriers to adopting AI [43]. Because if and only if the data set is trained with quality inputs, we can expect our desired output to be of high quality. Figure 6 shows the barriers to adopting AI in talent sourcing. Around 40% opined about the lack of skilled HR professionals, while 23% opined about the lack of budget. 21% opined about the challenges in feeding quality data, while lack of accurate evaluation and high risk have 11% and 5% chances.

### 2.2.7. The possible drawbacks associated with implementing AI in talent acquisition

According to the data, people opine reliability is the area that needs to be addressed before implementing AI. Because by implementing AI, there is a chance of reliability (only identifies certain patterns and can't accept beyond if there is a deviation) getting hampered because AI identifies only specific patterns and cannot go beyond the instructions programmed. Figure 7 shows the possible drawbacks of AI.

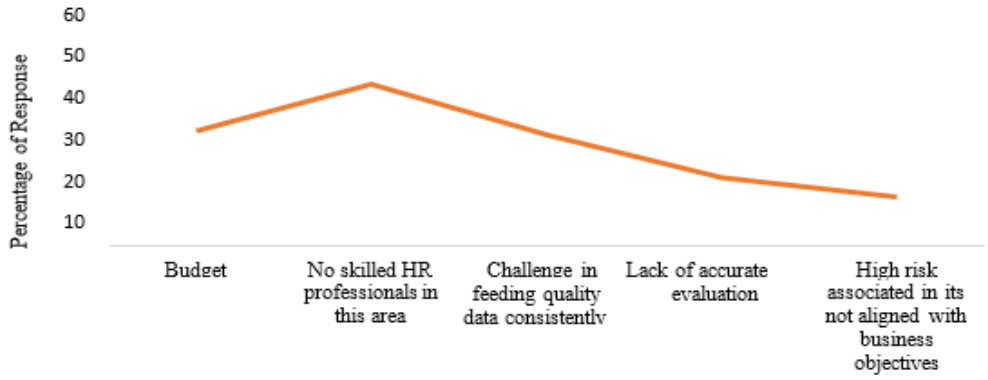


Figure 6. Core barriers to adopting AI

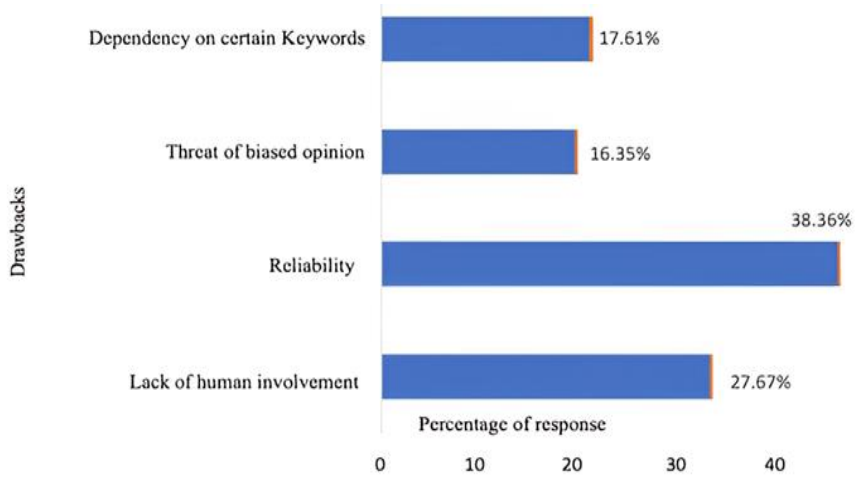


Figure 7. Possible drawbacks of implementing AI

### 2.2.8. The effectiveness of AI applications in screening/candidate evaluation

The majority (33%) opine that evaluating through chatbots is very effective, followed by evaluating personality traits and automated assessments. The evaluation of chatbots achieved good significance because, despite any deviation from the expected output, human intervention is coupled and ensures customer service excellence. Around 29% opined that combination of personality trait, chatbots and automated assessments will be very effective in evaluation/screening process of the candidates. Figure 8 shows its summary.

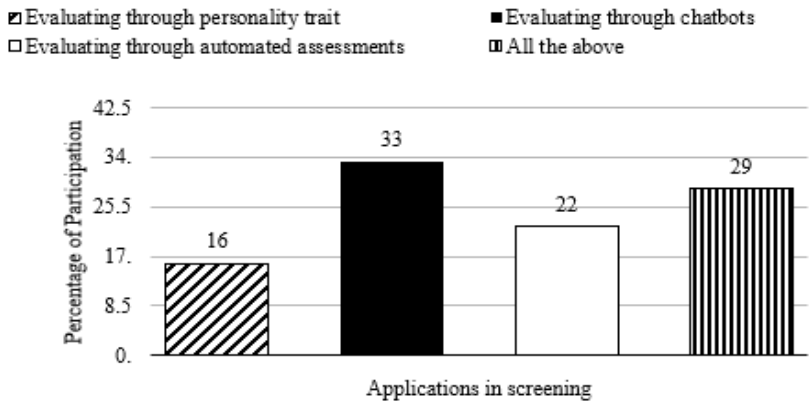


Figure 8. Effective applications of AI in screening

### 2.2.9. Imparting AI in training employees

Based on the data as shown in Figure 9, most people opine that imparting training through AI dramatically benefits the organization because automated assessments are very effective in scrutinizing the workforce. People centric evaluations may sometimes lead to biased assessment. Around 92% agreed that AI based training will be benefited, while 8% people disagreed with the questioner.

### 2.2.10. Satisfaction of AI in the hiring process

Scheduling a hiring process with AI satisfies your requirements in selecting the right candidate and reduces recruitment costs. Most respondents opine that implementing AI in the hiring process reduces recruitment costs and adds exceptional value to selecting the right candidate. Around 79% opined about their satisfaction in implementing AI in hiring process, while remaining 21% is not satisfied. Figure 10 shows its summary.

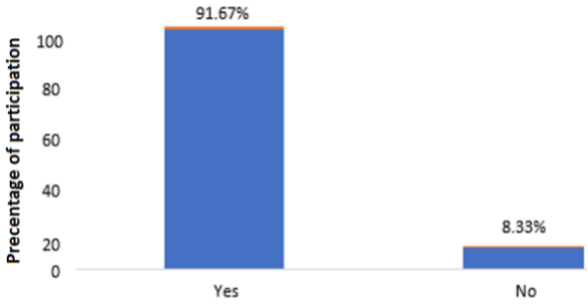


Figure 9. Opinion on implementing AI

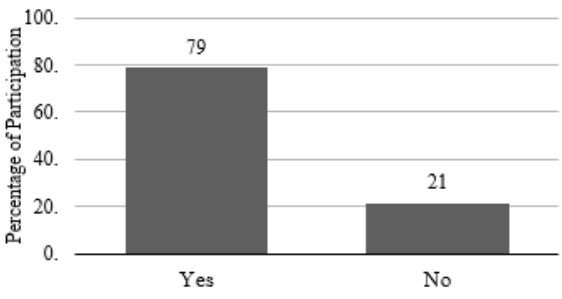


Figure 10. Benefits of implementing AI

## 3. CONCLUSION

Based on the opinions of the respondents, a few insights can be depicted, such as the primary application of AI in hiring function lies in social candidate discovery (It is a tool where it screens the digital behavior of the job applicant and decides whether the application is selected/rejected as per the requirement), job market forecasting and filtering the resumes with the help of tools powered by AI. Respondents also stated that the potential drawback of AI lies in lack of reliability as it can only identify a few trained patterns but cannot exceed beyond the instructions coded. In addition to this, the potential barrier to adopting AI is a lack of relevant skills in understanding the usage and format to resolve various complex issues. In other words, for some organizations, it is even more critical to feed quality data consistently. It is highly recommended to use AI in talent sourcing. It will reduce the cost of hiring process, recruitment will be unbiased and the skilled persons can be found out in a fraction of seconds based on the job descriptions.

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## BIOGRAPHIES OF AUTHORS

**Varun Chand Hemachandran** holds a PhD in Intelligent Transportation Systems from Vellore Institute of Technology, Vellore, India in 2022. He also received his Bachelor of Technology (B. Tech) in Information Technology from Mahatma Gandhi University, India in 2007, Master of Technology (M. Tech) in Computer Science and Engineering from Karunya University, India in 2010 and Master of Business Administration (MBA) in Human Resource Management from Mahatma Gandhi University, India in 2013. He is currently an Assistant Professor at Computer Science and Engineering Department in College of Engineering Perumon, which is affiliated to APJ Abdul Kalam Technological University, Kerala, India. His research includes intelligent transportation systems, machine learning, deep learning, IoT and graph theory. He can be contacted at email: varunchandh@perumonec.ac.in or varunchand123@gmail.com.

**Kurakula Arun Kumar** is an Assistant Professor of Computer Science and Engineering at Sree Vidyanikethan Engineering College,Tirupathi, Andhra Pradesh, India. He is currently pursuing Ph. D at School of Information Technology and Engineering, Vellore Institute of Technology, Vellore, India. His research interest includes internet of things, wireless sensor networks, Artificial intelligence. Arun has authored several scientific publications in peer-reviewed journals published more than 12 research articles in these fields. He is a member of IEI. He can be contacted at email: arun.aitsr@gmail.com or k.arunjoy@gmail.com.

**Syarul Azlina Sikandar** received a bachelor's degree in film studies from Universiti Teknologi MARA, (UiTM), a master's degree from Universiti Kebangsaan Malaysia (UKM), and a Ph.D. degree from Universiti Sains Malaysia (USM) in 2014. Since 2001 she has joined in Universiti Pendidikan Sultan Idris as a senior lecturer. Now she is currently an Associate Professor with Universiti Teknologi MARA, (UiTM), Malaysia. Her main areas of research interest are Film Studies, Drama and Theatre, Performing Arts Management, Business in Entertainment, and Innovation in Arts. While she has been a faculty member at university for the past 18 years, she leads many research groups focused on the Performing Arts area. Her work has been published in journals and has been funded by the University. Currently, Associate Professor DR. Syarul Azlina Sikandar is active with her Ph.D. students from China and the local university. She can be contacted at email: syarul364@uitm.edu.my.

**Seema Sabharwal** is working as Assistant Professor in the Department of Computer Science at the Government Post Graduate College for Women, Panchkula, Haryana, India. She completed her B. Tech and M. Tech in Computer Science and Engineering from Kurukshetra University, Kurukshetra, Haryana, India in 2003 and 2007. Her research area includes Computer vision, Sign language translation, and Machine learning. She has been teaching for more than 15 years and has several research publications to her credit. She can be contacted at email: sabharwalseema@gmail.com.

**Sivaprakasam Arun Kumar** was born in Srivilliputtur, Tamil Nadu, and India. He received the B.E. degree in Computer Science and Engineering from the Anna University, Tamil Nadu, and India. In 2010, the M.Tech. Degree in Software Engineering from Karunya University, Coimbatore, Tamil Nadu, India. He has held Assistant Professor Positions at Kalaivani College of Technology, Coimbatore, Tamil Nadu, India and the University of Petroleum and Energy Studies, Dehradun, Uttarakhand. He also worked in Sikkim Manipal Institute of Technology, Sikkim. Currently he is the Academic Dean in Bethesda Institute of Sciences and Technology, Gwalior, Madhya Pradesh. His research interests include Big Data Analytics, Distributed Computing, and Machine Learning. He can be contacted at email: arunsphd@gmail.com.