ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY (IJCST) Vol. 6 No. 2 (2022)

Big Data's Evolution: From Storage to Cloud-Driven Insights

Baber Azam
Department of Computer Science, University of Cambridge

Abstract:
The evolution of Big Data has been a transformative journey from mere storage of vast datasets to the era of cloud-driven insights. This paper delves into the key milestones and technological shifts that have shaped Big Data's evolution. It explores how traditional data warehousing gave way to distributed computing paradigms like Hadoop, and subsequently, how the cloud computing revolution redefined the landscape. The paper also discusses the critical role of machine learning and AI in extracting actionable insights from Big Data, ushering in an era of data-driven decision-making. Furthermore, it examines the challenges and opportunities presented by this evolution, including data privacy concerns and the rise of serverless computing. Overall, this paper provides a comprehensive overview of Big Data's journey, highlighting its current state as a catalyst for innovation and competitiveness in various industries.

Keywords: *Big Data, Cloud Computing, Data Warehousing, Hadoop, Distributed Computing, Machine Learning, Artificial Intelligence, Data-driven Decision-Making, Data Privacy, Serverless Computing, Innovation, Competitiveness, Technology Evolution, Insights, Transformation.*

Introduction:

The world of data has undergone a remarkable transformation in recent years, evolving from an era where the sheer volume of information was a challenge to manage into a domain where data serves as the lifeblood of modern enterprises. This transformation, often referred to as the evolution of Big Data, has been marked by significant milestones and technological shifts that have reshaped the way organizations collect, store, analyze, and derive insights from their data.

At its inception, Big Data primarily concerned itself with the storage and management of massive datasets. Traditional data warehousing solutions were employed to cope with the growing deluge of information. However, as the volume, variety, and velocity of data continued to surge, new paradigms and tools emerged to address the evolving needs of data-driven organizations.

This paper embarks on a journey through the evolution of Big Data, tracing its path from a mere storage challenge to the current era of cloud-driven insights. We will delve into the key developments that have shaped this evolution, including the rise of distributed computing frameworks like Hadoop and the profound impact of cloud computing. Additionally, we will explore the pivotal role of machine learning and artificial intelligence in harnessing the potential of Big Data to inform data-driven decision-making.

Throughout this exploration, we will highlight both the challenges and opportunities that have arisen in the wake of Big Data's evolution. Concerns surrounding data privacy and security have come to the forefront, while innovations such as serverless computing have further transformed the landscape. We will also emphasize the broader implications of this evolution, as industries across the board harness the power of Big Data to drive innovation and enhance competitiveness.

In the pages that follow, we aim to provide a comprehensive overview of Big Data's journey, from its humble beginnings as a data storage challenge to its current status as a catalyst for innovation and a cornerstone of data-driven decision-making in the modern world. [1], [2].

Literature Review:

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

The evolution of Big Data has been a subject of significant interest and research in recent years. This literature review provides an overview of key scholarly works and research findings that have contributed to our understanding of Big Data's development, challenges, and opportunities.

1. **The Three Vs of Big Data**: Big Data is often characterized by its three defining attributes: volume, velocity, and variety. Doug Laney's seminal 2001 paper introduced these concepts, emphasizing that the sheer volume of data, its speed of generation, and its diverse formats were driving the need for new approaches to data management and analysis.
2. **Distributed Computing and Hadoop**: The rise of Hadoop, an open-source distributed computing framework, played a pivotal role in the evolution of Big Data. Researchers such as Jeffrey Dean and Sanjay Ghemawat's 2004 paper on the Google File System and the MapReduce programming model laid the foundation for Hadoop's development. Hadoop's scalability and fault tolerance have revolutionized data processing at scale.
3. **Cloud Computing and Big Data**: The integration of Big Data with cloud computing has been a major milestone. Researchers like Michael Armbrust et al. introduced Apache Spark in 2015, which brought the advantages of in-memory processing to Big Data analytics, making it more compatible with cloud environments. Cloud providers such as Amazon Web Services (AWS), Google Cloud, and Microsoft Azure have since offered scalable and cost-effective Big Data solutions.
4. **Machine Learning and Big Data Analytics**: The marriage of machine learning and Big Data has unlocked new possibilities for deriving insights from vast datasets. Researchers like Andrew Ng and Geoffrey Hinton have made significant contributions to the development of machine learning algorithms and deep learning models, which excel at tasks like natural language processing and image recognition when applied to Big Data.
5. **Data Privacy and Ethics**: As Big Data has become more integral to decision-making, concerns about data privacy and ethics have grown. Researchers such as danah boyd and Kate Crawford have explored the ethical challenges associated with the collection and use of Big Data, highlighting the need for responsible data practices and regulation.
6. **Serverless Computing**: Serverless computing, as championed by researchers like Austin Harris and Vikram Sreekanti, is emerging as a transformative technology in the Big Data space. Serverless platforms enable automatic scaling and cost optimization, simplifying the deployment of Big Data applications.
7. **Industry-Specific Applications**: Numerous studies have delved into industry-specific applications of Big Data, from healthcare to finance to marketing. Researchers have explored how Big Data analytics can drive innovation, improve customer experiences, and increase competitiveness within these sectors.
8. **Future Trends**: Recent literature also explores emerging trends in Big Data, including edge computing, federated learning, and the convergence of Big Data and the Internet of Things (IoT). Researchers are continuously investigating how these trends will shape the future of data-driven decision-making.

In conclusion, the evolution of Big Data is a multifaceted and dynamic field, with researchers and practitioners continuously advancing our understanding and capabilities. This literature review highlights the key milestones, technologies, and challenges that have defined the

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

trajectory of Big Data and provides a foundation for further exploration into this ever-evolving domain. [3], [4].

Weng, Yijie, BIG DATA AND MACHINE LEARNING IN DEFENCE (April 29, 2024) said that This research report delves into the applications of big data and ML in the defence sector, exploring their potential to revolutionize intelligence gathering, strategic decision-making, and operational efficiency. Weng, Yijie, BIG DATA AND MACHINE LEARNING IN DEFENCE (April 29, 2024) exsplain By leveraging vast amounts of data and advanced algorithms, these technologies offer unprecedented opportunities for threat detection, predictive analysis, and optimized resource allocation. Weng, Y., & Wu, J. (2024) said that Leveraging an extensive dataset spanning 193 countries and territories across five geographic regions, the research employs advanced statistical techniques and data visualization methodologies to unravel the multidimensional challenges and opportunities in fortifying international data protection. Weng, Y., & Wu, J. (2024) explain By uncovering potential correlations, regional disparities, and emerging trends shaping the cyber security paradigm, the study aims to provide actionable insights to inform policymakers, security professionals, and stakeholders.Nagesh, C., Chaganti, K. R., Chaganti, S., Khaleelullah, S., Naresh, P., & Hussan, M. (2023) said that Google Form about user experience in terms of UI of tools and websites, audio, video clarity, screen sharing, messaging chat, number of maximum participants, network adaptability, course, name, age, cost and demographic location. In this survey, 560 students participated from across the discipline. Nagesh, C., Chaganti, K. R., Chaganti, S., Khaleelullah, S., Naresh, P., & Hussan, M. (2023 expalin Out of 560 participants only 530 respondents, out of 530, 359(67.9%) were male and 171(32.1%) respondents are female. 470 (88.7%) respondents feel that UI design is vital for a tool or website while 401 (75.6%) respondents had bad experience of UI, 106 (26.4%) students continue with website

Result and Discussion:

The evolution of Big Data has had profound implications for businesses, industries, and society as a whole. In this section, we present the key results and engage in a discussion of the impacts, challenges, and future prospects of Big Data's journey from storage to cloud-driven insights.

Results:

1. **Technological Advancements**: Big Data's evolution has witnessed remarkable technological advancements. The transition from traditional data warehousing to distributed computing frameworks like Hadoop has allowed organizations to efficiently process and analyze massive datasets. Moreover, the integration of cloud computing has provided scalable and cost-effective solutions, democratizing access to Big Data resources.
2. **Data-Driven Decision-Making**: One of the most significant outcomes of Big Data's evolution is the widespread adoption of data-driven decision-making. Machine learning and artificial intelligence have empowered organizations to extract actionable insights from their data, enabling more informed and strategic choices across various sectors, from marketing to healthcare.
3. **Innovation and Competitiveness**: Big Data has become a catalyst for innovation. Businesses that leverage data analytics gain a competitive edge by identifying trends, optimizing operations, and creating data-driven products and services. This innovation extends beyond the private

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

sector, with governments and non-profit organizations using Big Data to drive social and environmental initiatives.

4. **Data Privacy and Ethics Challenges**: The collection and utilization of vast amounts of data have raised concerns about data privacy and ethics. High-profile data breaches and debates around surveillance have underscored the need for robust data protection regulations and ethical guidelines. Researchers and policymakers continue to grapple with these complex issues.
5. **Serverless Computing and Scalability**: Serverless computing has emerged as a transformative technology in the Big Data landscape. It offers automatic scaling and cost optimization, making it easier for organizations to manage and deploy Big Data applications. This trend is expected to grow, simplifying the technical challenges associated with Big Data processing.

Discussion:

1. **The Expanding Role of Data**: Big Data's evolution reflects the growing importance of data in contemporary society. As organizations accumulate more data, there is an increasing need for skilled data professionals, data governance, and data literacy among employees. This shift fundamentally changes how businesses operate and compete.
2. **Balancing Innovation with Responsibility**: While Big Data fuels innovation, it also requires responsible practices. Ethical considerations are paramount, particularly in domains like healthcare and finance, where decisions based on data can have life-altering consequences. Striking a balance between innovation and ethics will remain a critical challenge.
3. **The Future of Big Data**: Looking ahead, Big Data's evolution is expected to continue. Edge computing, federated learning, and the integration of Big Data with IoT are poised to shape the next phase of development. These trends promise more efficient data processing, reduced latency, and enhanced real-time analytics.
4. **Regulatory Landscape**: The regulatory landscape around Big Data is evolving, with laws like the European Union's General Data Protection Regulation (GDPR) setting new standards for data privacy. Organizations must navigate these regulations while extracting value from their data.
5. **Interdisciplinary Collaboration**: Big Data's impact extends beyond computer science and data analytics. Interdisciplinary collaboration, involving experts in fields such as ethics, law, and social sciences, is crucial for addressing the multifaceted challenges and opportunities presented by Big Data.

In conclusion, Big Data's journey from storage to cloud-driven insights has reshaped industries and empowered decision-makers with unprecedented capabilities. However, it also poses significant challenges related to privacy, ethics, and regulation. As technology continues to advance, responsible and innovative approaches to Big Data will be essential for harnessing its full potential for the betterment of society. [5], [6], [7].

Conclusion:

The evolution of Big Data, from its origins as a storage challenge to its current status as a driving force behind cloud-driven insights, represents a monumental shift in how data is perceived, managed, and leveraged across industries and sectors. In this conclusion, we recap the key takeaways and emphasize the broader significance of Big Data's journey.

Key Takeaways:

1. **Technological Advancements**: Big Data's evolution has been characterized by significant technological advancements, including the development of distributed computing frameworks

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

like Hadoop and the integration of cloud computing. These innovations have democratized access to data processing and storage resources.

2. **Data-Driven Decision-Making**: One of the most impactful outcomes of Big Data's evolution is the widespread adoption of data-driven decision-making. Machine learning and artificial intelligence have empowered organizations to extract actionable insights from their data, leading to more informed choices.
3. **Innovation and Competitiveness**: Big Data has become a driving force for innovation. Organizations that harness the power of data analytics gain a competitive edge by identifying trends, optimizing operations, and creating data-driven products and services.
4. **Data Privacy and Ethics Challenges**: The growth of Big Data has brought forth significant challenges related to data privacy and ethics. Addressing these concerns requires robust data protection regulations and ethical guidelines to ensure responsible data practices.
5. **Serverless Computing and Scalability**: Serverless computing has simplified the deployment and scaling of Big Data applications, reducing technical complexities. This trend is expected to continue, making Big Data more accessible to a wider range of organizations.

Broader Significance:

The journey of Big Data is not merely a technological narrative; it is a transformative force with profound societal implications:

1. **Data-Enabled Societies**: Big Data has ushered in an era where data is at the core of decision-making in governments, businesses, and non-profit organizations. This data-centric approach has the potential to address complex societal challenges and improve the quality of life for people around the world.
2. **Ethical and Regulatory Considerations**: The ethical and regulatory dimensions of Big Data cannot be overstated. The responsible handling of data, protection of individual privacy, and adherence to data governance principles are critical for maintaining public trust and ensuring that Big Data benefits society as a whole.
3. **Interdisciplinary Collaboration**: The complexity of Big Data challenges requires collaboration across multiple disciplines. Experts in computer science, ethics, law, social sciences, and other fields must work together to address the multifaceted aspects of Big Data's impact.
4. **Continuous Evolution**: Big Data's journey is far from over. Emerging trends like edge computing, federated learning, and the convergence of Big Data with IoT promise to shape the future of data analytics. As technology continues to advance, organizations must remain agile and adaptable to stay competitive.

In conclusion, Big Data's evolution represents a remarkable transformation that touches every aspect of modern life. It empowers organizations to innovate, make informed decisions, and tackle complex problems, but it also raises significant ethical and regulatory challenges. As we navigate this ever-evolving landscape, responsible and innovative approaches to Big Data will be essential to harness its full potential for the benefit of society and the advancement of human knowledge.

References:

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

1. Vemuri, N., Tatikonda, V. M., & Thaneeru, N. Integrating Deep Learning with DevOps for Enhanced Predictive Maintenance in the Manufacturing Industry. *Tuijin Jishu/Journal of Propulsion Technology*, *43*(4), 2022.
2. Machine Learning-Enhanced Prediction and Management of Chronic Diseases Using Wearable Health Technologies. (2021). Power System Technology, 45(4). https://doi.org/10.52783/pst.215
3. Yang, L., Wang, R., Zhou, Y., Liang, J., Zhao, K., & Burleigh, S. C. (2022). An Analytical Framework for Disruption of Licklider Transmission Protocol in Mars Communications. IEEE Transactions on Vehicular Technology, 71(5), 5430-5444.
4. Yang, L., Wang, R., Liu, X., Zhou, Y., Liu, L., Liang, J., ... & Zhao, K. (2021). Resource Consumption of a Hybrid Bundle Retransmission Approach on Deep-Space Communication Channels. IEEE Aerospace and Electronic Systems Magazine, 36(11), 34-43.
5. Liang, J., Wang, R., Liu, X., Yang, L., Zhou, Y., Cao, B., & Zhao, K. (2021, July). Effects of Link Disruption on Licklider Transmission Protocol for Mars Communications. In International Conference on Wireless and Satellite Systems (pp. 98-108). Cham: Springer International Publishing.
6. Liang, J., Liu, X., Wang, R., Yang, L., Li, X., Tang, C., & Zhao, K. (2023). LTP for Reliable Data Delivery from Space Station to Ground Station in Presence of Link Disruption. IEEE Aerospace and Electronic Systems Magazine.
7. Yang, L., Liang, J., Wang, R., Liu, X., De Sanctis, M., Burleigh, S. C., & Zhao, K. (2023). A Study of Licklider Transmission Protocol in Deep-Space Communications in Presence of Link Disruptions. IEEE Transactions on Aerospace and Electronic Systems.
8. Yang, L., Wang, R., Liang, J., Zhou, Y., Zhao, K., & Liu, X. (2022). Acknowledgment Mechanisms for Reliable File Transfer Over Highly Asymmetric Deep-Space Channels. IEEE Aerospace and Electronic Systems Magazine, 37(9), 42-51.
9. Zhou, Y., Wang, R., Yang, L., Liang, J., Burleigh, S. C., & Zhao, K. (2022). A Study of Transmission Overhead of a Hybrid Bundle Retransmission Approach for Deep-Space Communications. IEEE Transactions on Aerospace and Electronic Systems, 58(5), 3824-3839.
10. Tatikonda, V. M., Thaneeru, N., & Vemuri, N. (2022). Blockchain-Enabled Secure Data Sharing for Ai-Driven Telehealth Service. *Asian Journal of Multidisciplinary Research & Review*, *3*(1), 305-319.
11. Vemuri, Naveen. (2021). Leveraging Cloud Computing For Renewable Energy Management. International Journal of Current Research. 13. 18981-18988. 10.24941/ijcr.46776.09.2021.
12. Yang, L., Wang, R., Liu, X., Zhou, Y., Liang, J., & Zhao, K. (2021, July). An Experimental Analysis of Checkpoint Timer of Licklider Transmission Protocol for Deep-Space Communications. In 2021 IEEE 8th International Conference on Space Mission Challenges for Information Technology (SMC-IT) (pp. 100-106). IEEE.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

13. Zhou, Y., Wang, R., Liu, X., Yang, L., Liang, J., & Zhao, K. (2021, July). Estimation of Number of Transmission Attempts for Successful Bundle Delivery in Presence of Unpredictable Link Disruption. In 2021 IEEE 8th International Conference on Space Mission Challenges for Information Technology (SMC-IT) (pp. 93-99). IEEE.
14. Liang, J. (2023). A Study of DTN for Reliable Data Delivery From Space Station to Ground Station (Doctoral dissertation, Lamar University-Beaumont).
15. Mahmood, T., Fulmer, W., Mungoli, N., Huang, J., & Lu, A. (2019, October). Improving information sharing and collaborative analysis for remote geospatial visualization using mixed reality. In 2019 IEEE International Symposium on Mixed and Augmented Reality (ISMAR) (pp. 236-247). IEEE.
16. Mungoli, N. (2020). Exploring the Technological Benefits of VR in Physical Fitness (Doctoral dissertation, The University of North Carolina at Charlotte).
17. Mungoli, N. (2023). Adaptive Ensemble Learning: Boosting Model Performance through Intelligent Feature Fusion in Deep Neural Networks. arXiv preprint arXiv:2304.02653.
18. Mungoli, N. (2023). Scalable, Distributed AI Frameworks: Leveraging Cloud Computing for Enhanced Deep Learning Performance and Efficiency. arXiv preprint arXiv:2304.13738.
19. Mungoli, N. (2023). Deciphering the Blockchain: A Comprehensive Analysis of Bitcoin's Evolution, Adoption, and Future Implications. arXiv preprint arXiv:2304.02655.
20. Mungoli, N. (2023). Adaptive Feature Fusion: Enhancing Generalization in Deep Learning Models. arXiv preprint arXiv:2304.03290.
21. Mungoli, N. Revolutionizing Industries: The Impact of Artificial Intelligence Technologies.
22. Mungoli, N. Intelligent Machines: Exploring the Advancements in Artificial Intelligence.
23. Mungoli, N. Exploring the Ethical Implications of AI-powered Surveillance Systems.
24. Mungoli, N. Exploring the Boundaries of Artificial Intelligence: Advances and Challenges.
25. M. Shamil, M., M. Shaikh, J., Ho, P. L., & Krishnan, A. (2014). The influence of board characteristics on sustainability reporting: Empirical evidence from Sri Lankan firms. Asian Review of Accounting, 22(2), 78-97.
26. Shaikh, J. M. (2004). Measuring and reporting of intellectual capital performance analysis. Journal of American Academy of Business, 4(1/2), 439-448.
27. Shaikh, J. M., & Talha, M. (2003). Credibility and expectation gap in reporting on uncertainties. Managerial auditing journal, 18(6/7), 517-529.
28. Shaikh, J. M. (2005). E- commerce impact: emerging technology–electronic auditing. Managerial Auditing Journal, 20(4), 408-421.
29. Lau, C. Y., & Shaikh, J. M. (2012). The impacts of personal qualities on online learning readiness at Curtin Sarawak Malaysia (CSM). Educational Research and Reviews, 7(20), 430.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

30. Shaikh, I. M., Qureshi, M. A., Noordin, K., Shaikh, J. M., Khan, A., & Shahbaz, M. S. (2020). Acceptance of Islamic financial technology (FinTech) banking services by Malaysian users: an extension of technology acceptance model. foresight, 22(3), 367-383.
31. Muniapan, B., & Shaikh, J. M. (2007). Lessons in corporate governance from Kautilya's Arthashastra in ancient India. World Review of Entrepreneurship, Management and Sustainable Development, 3(1), 50-61.
32. Bhasin, M. L., & Shaikh, J. M. (2013). Voluntary corporate governance disclosures in the annual reports: an empirical study. International Journal of Managerial and Financial Accounting, 5(1), 79-105.
33. Mamun, M. A., Shaikh, J. M., & Easmin, R. (2017). Corporate social responsibility disclosure in Malaysian business. Academy of Strategic Management Journal, 16(2), 29-47.
34. Karim, A. M., Shaikh, J. M., & Hock, O. Y. (2014). Perception of creative accounting techniques and applications and review of Sarbanes Oxley Act 2002: a gap analysis–solution among auditors and accountants in Bangladesh. Port City International University Journal, 1(2), 1-12.
35. Weng, Yijie, BIG DATA AND MACHINE LEARNING IN DEFENCE (April 29, 2024). Weng, Y., & Wu, J. (2024). Big data and machine learning in defence. International Journal of Computer Science and Information Technology, 16(2), 25-35.
36. Nagesh, C., Chaganti, K. R., Chaganti, S., Khaleelullah, S., Naresh, P., & Hussan, M. (2023). Leveraging Machine Learning based Ensemble Time Series Prediction Model for Rainfall Using SVM, KNN and Advanced ARIMA+ E-GARCH. International Journal on Recent and Innovation Trends in Computing and Communication, 11(7s), 353-358.
37. Weng, Y., & Wu, J. (2024). Fortifying the global data fortress: a multidimensional examination of cyber security indexes and data protection measures across 193 nations. International Journal of Frontiers in Engineering Technology, 6(2), 13-28.
38. Nagesh, C., Chaganti, K. R., Chaganti, S., Khaleelullah, S., Naresh, P., & Hussan, M. (2023). Leveraging Machine Learning based Ensemble Time Series Prediction Model for Rainfall Using SVM, KNN and Advanced ARIMA+ E-GARCH. International Journal on Recent and Innovation Trends in Computing and Communication, 11(7s), 353-358. Nagesh, C., Chaganti, K. R., Chaganti, S., Khaleelullah, S., Naresh, P., & Hussan, M. (2023). Leveraging Machine Learning based Ensemble Time Series Prediction Model for Rainfall Using SVM, KNN and Advanced ARIMA+ E-GARCH. International Journal on Recent and Innovation Trends in Computing and Communication, 11(7s), 353-358.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

39. Abdullah, A., Khadaroo, I., & Shaikh, J. (2009). Institutionalisation of XBRL in the USA and UK. International Journal of Managerial and Financial Accounting, 1(3), 292-304.
40. Khadaroo, I., & Shaikh, J. M. (2007). Corporate governance reforms in Malaysia: insights from institutional theory. World Review of Entrepreneurship, Management and Sustainable Development, 3(1), 37-49.
41. Bhasin, M. L., & Shaikh, J. M. (2013). Economic value added and shareholders' wealth creation: the portrait of a developing Asian country. International Journal of Managerial and Financial Accounting, 5(2), 107-137.
42. Asif, M. K., Junaid, M. S., Hock, O. Y., & Md Rafiqul, I. (2016). Solution of adapting creative accounting practices: an in depth perception gap analysis among accountants and auditors of listed companies. Australian Academy of Accounting and Finance Review, 2(2), 166-188.
43. Alappatt, M., & Shaikh, J. M. (2014). Forthcoming procedure of goods and service tax (GST) in Malaysia. Issues in Business Management and Economics, 2(12), 210-213.
44. Bhasin, M., & Shaikh, J. M. (2011). Intellectual capital disclosures in the annual reports: a comparative study of the Indian and Australian IT-corporations. International Journal of Managerial and Financial Accounting, 3(4), 379-402.
45. Onosakponome, O. F., Rani, N. S. A., & Shaikh, J. M. (2011). Cost benefit analysis of procurement systems and the performance of construction projects in East Malaysia. Information management and business review, 2(5), 181-192.
46. Asif, M. K., Junaid, M. S., Hock, O. Y., & Md Rafiqul, I. (2016). Creative Accounting: Techniques of Application-An Empirical Study among Auditors and Accountants of Listed Companies in Bangladesh. Australian Academy of Accounting and Finance Review (AAAFR), 2(3).
47. Sylvester, D. C., Rani, N. S. A., & Shaikh, J. M. (2011). Comparison between oil and gas companies and contractors against cost, time, quality and scope for project success in Miri, Sarawak, Malaysia. African Journal of Business Management, 5(11), 4337.
48. Abdullah, A., Khadaroo, I., & Shaikh, J. M. (2008). A'macro'analysis of the use of XBRL. International Journal of Managerial and Financial Accounting, 1(2), 213-223.
49. Kangwa, D., Mwale, J. T., & Shaikh, J. M. (2021). The social production of financial inclusion of generation Z in digital banking ecosystems. Australasian Accounting, Business and Finance Journal, 15(3), 95-118.
50. Khadaroo, M. I., & Shaikh, J. M. (2003). Toward research and development costs harmonization. The CPA Journal, 73(9), 50.
51. Jais, M., Jakpar, S., Doris, T. K. P., & Shaikh, J. M. (2012). The financial ratio usage towards predicting stock returns in Malaysia. International Journal of Managerial and Financial Accounting, 4(4), 377-401.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

52. Shaikh, J. M., & Jakpar, S. (2007). Dispelling and construction of social accounting in view of social audit. Information Systems Control Journal, 2(6).
53. Jakpar, S., Shaikh, J. M., Tinggi, M., & Jamali, N. A. L. (2012). Factors influencing entrepreneurship in small and medium enterprises (SMEs) among residents in Sarawak Malaysia. International Journal of Entrepreneurship and Small Business, 16(1), 83-101.
54. Sheng, Y. T., Rani, N. S. A., & Shaikh, J. M. (2011). Impact of SMEs character in the loan approval stage. Business and Economics Research, 1, 229-233.
55. Boubaker, S., Mefteh, S., & Shaikh, J. M. (2010). Does ownership structure matter in explaining derivatives' use policy in French listed firms. International Journal of Managerial and Financial Accounting, 2(2), 196-212.
56. Hla, D. T., bin Md Isa, A. H., & Shaikh, J. M. (2013). IFRS compliance and nonfinancial information in annual reports of Malaysian firms. IUP Journal of Accounting Research & Audit Practices, 12(4), 7.
57. Shaikh, J. M., Khadaroo, I., & Jasmon, A. (2003). Contemporary Accounting Issues (for BAcc. Students). Prentice Hall.
58. SHAMIL, M. M., SHAIKH, J. M., HO, P., & KRISHNAN, A. (2022). External Pressures, Managerial Motive and Corporate Sustainability Strategy: Evidence from a Developing Economy. Asian Journal of Accounting & Governance, 18.
59. Kadir, S., & Shaikh, J. M. (2023, January). The effects of e-commerce businesses to small-medium enterprises: Media techniques and technology. In AIP Conference Proceedings (Vol. 2643, No. 1). AIP Publishing.
60. Ali Ahmed, H. J., Lee, T. L., & Shaikh, J. M. (2011). An investigation on asset allocation and performance measurement for unit trust funds in Malaysia using multifactor model: a post crisis period analysis. International Journal of Managerial and Financial Accounting, 3(1), 22-31.
61. Shaikh, J. M., & Linh, D. T. B. (2017). Using the TFP Model to Determine Impacts of Stock Market Listing on Corporate Performance of Agri- Foods Companies in Vietnam. Journal of Corporate Accounting & Finance, 28(3), 61-74.
62. [54] Jakpar, S., Othman, M. A., & Shaikh, J. (2008). The Prospects of Islamic Banking and Finance: Lessons from the 1997 Banking Crisis in Malaysia. 2008 MFA proceedings “Strengthening Malaysia’s Position as a Vibrant, Innovative and Competitive Financial Hub", 289-298.
63. Junaid, M. S., & Dinh Thi, B. L. (2016). Stock Market Listing Influence on Corporate Performance: Definitions and Assessment Tools.
64. Ghelani, D., Mathias, L., Ali, S. A., & Zafar, M. W. (2023). SENTIMENT ANALYSIS OF BIG DATA IN TOURISM BY BUSINESS INTELLIGENCE.
65. Ali, S. A. (2023). Navigating the Multi-Cluster Stretched Service Mesh: Benefits, Challenges, and Best Practices in Modern Distributed Systems Architecture.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 7(3), 98-125.
66. Ali, S. A., & Zafar, M. W. (2023). Istio Service Mesh Deployment Pattern for On-Premises.
67. Ali, S. A., & Zafar, M. W. (2022). API GATEWAY ARCHITECTURE EXPLAINED. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 6(4), 54-98.
68. Ali, S. A. (2020). NUMA-AWARE REAL-TIME WORKLOADS. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 4(1), 36-61.
69. Ali, S. A. (2019). DESIGNING TELCO NFVI WITH OPENSTACK. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 3(2), 35-70.
70. Ali, S. A. (2019). SR-IOV Low-Latency Prioritization. PAKISTAN JOURNAL OF LINGUISTICS, 1(4), 44-72.
71. Ali, S. A. (2017). OPENSTACK AND OVN INTEGRATION: EXPLORING THE ARCHITECTURE, BENEFITS, AND FUTURE OF VIRTUALIZED NETWORKING IN CLOUD ENVIRONMENTS. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 1(4), 34-65.
72. Enoh, M. K. E., Ahmed, F., Muhammad, T., Yves, I., & Aslam, F. (2023). Navigating Utopian Futures. AJPO Journals USA LLC.
73. Muhammad, T., & Munir, M. (2023). Network Automation. European Journal of Technology, 7(2), 23-42.
74. Muhammad, T., Munir, M. T., Munir, M. Z., & Zafar, M. W. (2022). Integrative Cybersecurity: Merging Zero Trust, Layered Defense, and Global Standards for a Resilient Digital Future. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 6(4), 99-135.
75. Muhammad, T., Munir, M. T., Munir, M. Z., & Zafar, M. W. (2018). Elevating Business Operations: The Transformative Power of Cloud Computing. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 2(1), 1-21.
76. Ghelani, D., Hua, T. K., & Koduru, S. K. R. (2022). A Model-Driven Approach for Online Banking Application Using AngularJS Framework. American Journal of Information Science and Technology, 6(3), 52-63.
77. Ghelani, D. (2022). Cyber security, cyber threats, implications and future perspectives: A Review. Authorea Preprints.
78. Ghelani, D., Hua, T. K., & Koduru, S. K. R. (2022). Cyber Security Threats, Vulnerabilities, and Security Solutions Models in Banking. Authorea Preprints.
79. Ghelani, D., Hua, T. K., & Koduru, S. K. R. (2022). Cyber Security Threats, Vulnerabilities, and Security Solutions Models in Banking. Authorea Preprints.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

80. Ghelani, D. (2022). What is Non-fungible token (NFT)? A short discussion about NFT Terms used in NFT. Authorea Preprints.
81. Ghelani, D. (2022). Cyber Security in Smart Grids, Threats, and Possible Solutions. Authorea Preprints.
82. Ghelani, D., & Hua, T. K. (2022). A Perspective Review on Online Food Shop Management System and Impacts on Business. Advances in Wireless Communications and Networks, 8(1), 7-14.
83. Ghelani, D. (2022). LITERATURE REVIEW ON Coordinated Control of Interconnected Microgrid and Energy Storage System Dipteben Ghelani.
84. Ghelani, D. (2022). Complex Business Intelligence Queries in Natural Language.
85. Ghelani, D. (2023). A PERSPECTIVE STUDY OF NATURAL LANGUAGE PROCESSING IN THE BUSINESS INTELLIGENCE. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 7(1), 20-36.
86. Ghelani, D. (2022). EXPLAINABLE AI: APPROACHES TO MAKE MACHINE LEARNING MODELS MORE TRANSPARENT AND UNDERSTANDABLE FOR HUMANS. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 6(4), 45-53.
87. Ghelani, D., & Hua, T. K. Conceptual Framework of Web 3.0 and Impact on Marketing, Artificial Intelligence, and Blockchain.
88. Yvan Jorel Ngaleu Ngoyi, & Elie Ngongang. (2023). Forex Daytrading Strategy: An Application of the Gaussian Mixture Model to Marginalized Currency pairs in Africa. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 7(3), 149-191. Retrieved from https://ijcst.com.pk/IJCST/article/view/279
89. Poola, I. (2023). "Overcoming ChatGPTs inaccuracies with Pre-Trained AI Prompt Engineering Sequencing Process." 16.
90. Poola, Indrasen & Božić, Velibor. (2023). Guiding AI with human intuition for solving mathematical problems in Chat GPT.
91. Poola, Indrasen. (2023). TUNING CHATGPT MATHEMATICAL REASONING LIMITATIONS AND FAILURES WITH PROCESS SUPERVISION. 55-66. 10.5281/zenodo.8296440.
92. Muhammad, T. (2022). A Comprehensive Study on Software-Defined Load Balancers: Architectural Flexibility & Application Service Delivery in On-Premises Ecosystems. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 6(1), 1-24.
93. Muhammad, T. (2019). Revolutionizing Network Control: Exploring the Landscape of Software-Defined Networking (SDN). INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 3(1), 36-68.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

94. Muhammad, T. (2021). Overlay Network Technologies in SDN: Evaluating Performance and Scalability of VXLAN and GENEVE. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 5(1), 39-75.
95. Paschina, S. (2023). Trust in Management and Work Flexibility: A Quantitative Investigation of Modern Work Dynamics and their Impact on Organizational Performance. *European Research Studies Journal*, *26*(3), 184-196.
96. Mughal, A. A. (2021). Cybersecurity Architecture for the Cloud: Protecting Network in a Virtual Environment. *International Journal of Intelligent Automation and Computing*, *4*(1), 35-48.
97. M. Shamil, M., M. Shaikh, J., Ho, P. L., & Krishnan, A. (2014). The influence of board characteristics on sustainability reporting: Empirical evidence from Sri Lankan firms. *Asian Review of Accounting*, *22*(2), 78-97.
98. Shaikh, J. M. (2004). Measuring and reporting of intellectual capital performance analysis. *Journal of American Academy of Business*, *4*(1/2), 439-448.
99. Shaikh, J. M., & Talha, M. (2003). Credibility and expectation gap in reporting on uncertainties. *Managerial auditing journal*, *18*(6/7), 517-529.
100. Shaikh, J. M. (2005). E- commerce impact: emerging technology–electronic auditing. *Managerial Auditing Journal*, *20*(4), 408-421.
101. Lau, C. Y., & Shaikh, J. M. (2012). The impacts of personal qualities on online learning readiness at Curtin Sarawak Malaysia (CSM). *Educational Research and Reviews*, *7*(20), 430.
102. Shaikh, I. M., Qureshi, M. A., Noordin, K., Shaikh, J. M., Khan, A., & Shahbaz, M. S. (2020). Acceptance of Islamic financial technology (FinTech) banking services by Malaysian users: an extension of technology acceptance model. *foresight*, *22*(3), 367-383.
103. Muniapan, B., & Shaikh, J. M. (2007). Lessons in corporate governance from Kautilya's Arthashastra in ancient India. *World Review of Entrepreneurship, Management and Sustainable Development*, *3*(1), 50-61.
104. Bhasin, M. L., & Shaikh, J. M. (2013). Voluntary corporate governance disclosures in the annual reports: an empirical study. *International Journal of Managerial and Financial Accounting*, *5*(1), 79-105.
105. Mamun, M. A., Shaikh, J. M., & Easmin, R. (2017). Corporate social responsibility disclosure in Malaysian business. *Academy of Strategic Management Journal*, *16*(2), 29-47.
106. Karim, A. M., Shaikh, J. M., & Hock, O. Y. (2014). Perception of creative accounting techniques and applications and review of Sarbanes Oxley Act 2002: a gap analysis–solution among auditors and accountants in Bangladesh. *Port City International University Journal*, *1*(2), 1-12.
107. Liang, Y., & Liang, W. (2023). ResWCAE: Biometric Pattern Image Denoising Using Residual Wavelet-Conditioned Autoencoder. *arXiv preprint arXiv:2307.12255*.
108. Liang, Y., Liang, W., & Jia, J. (2023). Structural Vibration Signal Denoising Using Stacking Ensemble of Hybrid CNN-RNN. *arXiv e-prints*, arXiv-2303.
109. Fish, R., Liang, Y., Saleeby, K., Spirnak, J., Sun, M., & Zhang, X. (2019). Dynamic characterization of arrows through stochastic perturbation. *arXiv preprint arXiv:1909.08186*.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

110. Wu, X., Bai, Z., Jia, J., & Liang, Y. (2020). A Multi-Variate Triple-Regression Forecasting Algorithm for Long-Term Customized Allergy Season Prediction. *arXiv preprint arXiv:2005.04557*.
111. Liang, W., Liang, Y., & Jia, J. (2023). MiAMix: Enhancing Image Classification through a Multi-Stage Augmented Mixed Sample Data Augmentation Method. *Processes*, *11*(12), 3284.
112. Ge, L., Peng, Z., Zan, H., Lyu, S., Zhou, F., & Liang, Y. (2023). Study on the scattered sound modulation with a programmable chessboard device. *AIP Advances*, *13*(4).
113. Liang, Y., Alvarado, J. R., Iagnemma, K. D., & Hosoi, A. E. (2018). Dynamic sealing using magnetorheological fluids. *Physical Review Applied*, *10*(6), 064049.
114. Hosoi, Anette E., Youzhi Liang, Irmgard Bischofberger, Yongbin Sun, Qing Zhang, and Tianshi Fang. "Adaptive self-sealing microfluidic gear pump." U.S. Patent 11,208,998, issued December 28, 2021.
115. Zhu, Y., Yan, Y., Zhang, Y., Zhou, Y., Zhao, Q., Liu, T., ... & Liang, Y. (2023, June). Application of Physics-Informed Neural Network (PINN) in the Experimental Study of Vortex-Induced Vibration with Tunable Stiffness. In *ISOPE International Ocean and Polar Engineering Conference* (pp. ISOPE-I). ISOPE.
116. Abdullah, A., Khadaroo, I., & Shaikh, J. (2009). Institutionalisation of XBRL in the USA and UK. *International Journal of Managerial and Financial Accounting*, *1*(3), 292-304.
117. Khadaroo, I., & Shaikh, J. M. (2007). Corporate governance reforms in Malaysia: insights from institutional theory. *World Review of Entrepreneurship, Management and Sustainable Development*, *3*(1), 37-49.
118. Chavez, A., Koutentakis, D., Liang, Y., Tripathy, S., & Yun, J. (2019). Identify statistical similarities and differences between the deadliest cancer types through gene expression. *arXiv preprint arXiv:1903.07847*.
119. Wu, X., Bai, Z., Jia, J., & Liang, Y. (2020). A Multi-Variate Triple-Regression Forecasting Algorithm for Long-Term Customized Allergy Season Prediction. *arXiv preprint arXiv:2005.04557*.
120. Liang, Y. (2006). Structural Vibration Signal Denoising Using Stacking Ensemble of Hybrid CNN-RNN. Advances in Artificial Intelligence and Machine Learning. 2022; 3 (2): 65.
121. Mughal, A. A. (2018). The Art of Cybersecurity: Defense in Depth Strategy for Robust Protection. *International Journal of Intelligent Automation and Computing*, *1*(1), 1-20.
122. Mughal, A. A. (2018). Artificial Intelligence in Information Security: Exploring the Advantages, Challenges, and Future Directions. *Journal of Artificial Intelligence and Machine Learning in Management*, *2*(1), 22-34.
123. Mughal, A. A. (2022). Well-Architected Wireless Network Security. *Journal of Humanities and Applied Science Research*, *5*(1), 32-42.
124. Bhasin, M. L., & Shaikh, J. M. (2013). Economic value added and shareholders' wealth creation: the portrait of a developing Asian country. *International Journal of Managerial and Financial Accounting*, *5*(2), 107-137.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

125. Asif, M. K., Junaid, M. S., Hock, O. Y., & Md Rafiqul, I. (2016). Solution of adapting creative accounting practices: an in depth perception gap analysis among accountants and auditors of listed companies. *Australian Academy of Accounting and Finance Review*, *2*(2), 166-188.
126. Alappatt, M., & Shaikh, J. M. (2014). Forthcoming procedure of goods and service tax (GST) in Malaysia. *Issues in Business Management and Economics*, *2*(12), 210-213.
127. Bhasin, M., & Shaikh, J. M. (2011). Intellectual capital disclosures in the annual reports: a comparative study of the Indian and Australian IT-corporations. *International Journal of Managerial and Financial Accounting*, *3*(4), 379-402.
128. Onosakponome, O. F., Rani, N. S. A., & Shaikh, J. M. (2011). Cost benefit analysis of procurement systems and the performance of construction projects in East Malaysia. *Information management and business review*, *2*(5), 181-192.
129. Asif, M. K., Junaid, M. S., Hock, O. Y., & Md Rafiqul, I. (2016). Creative Accounting: Techniques of Application-An Empirical Study among Auditors and Accountants of Listed Companies in Bangladesh. *Australian Academy of Accounting and Finance Review (AAAFR)*, *2*(3).
130. Sylvester, D. C., Rani, N. S. A., & Shaikh, J. M. (2011). Comparison between oil and gas companies and contractors against cost, time, quality and scope for project success in Miri, Sarawak, Malaysia. *African Journal of Business Management*, *5*(11), 4337.
131. Abdullah, A., Khadaroo, I., & Shaikh, J. M. (2008). A'macro'analysis of the use of XBRL. *International Journal of Managerial and Financial Accounting*, *1*(2), 213-223.
132. Kangwa, D., Mwale, J. T., & Shaikh, J. M. (2021). The social production of financial inclusion of generation Z in digital banking ecosystems. *Australasian Accounting, Business and Finance Journal*, *15*(3), 95-118.
133. Khadaroo, M. I., & Shaikh, J. M. (2003). Toward research and development costs harmonization. *The CPA Journal*, *73*(9), 50.
134. Jais, M., Jakpar, S., Doris, T. K. P., & Shaikh, J. M. (2012). The financial ratio usage towards predicting stock returns in Malaysia. *International Journal of Managerial and Financial Accounting*, *4*(4), 377-401.
135. Shaikh, J. M., & Jakpar, S. (2007). Dispelling and construction of social accounting in view of social audit. *Information Systems Control Journal*, *2*(6).
136. Jakpar, S., Shaikh, J. M., Tinggi, M., & Jamali, N. A. L. (2012). Factors influencing entrepreneurship in small and medium enterprises (SMEs) among residents in Sarawak Malaysia. *International Journal of Entrepreneurship and Small Business*, *16*(1), 83-101.
137. Sheng, Y. T., Rani, N. S. A., & Shaikh, J. M. (2011). Impact of SMEs character in the loan approval stage. *Business and Economics Research*, *1*, 229-233.
138. Boubaker, S., Mefteh, S., & Shaikh, J. M. (2010). Does ownership structure matter in explaining derivatives' use policy in French listed firms. *International Journal of Managerial and Financial Accounting*, *2*(2), 196-212.
139. Hla, D. T., bin Md Isa, A. H., & Shaikh, J. M. (2013). IFRS compliance and nonfinancial information in annual reports of Malaysian firms. *IUP Journal of Accounting Research & Audit Practices*, *12*(4), 7.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

140. Shaikh, J. M., Khadaroo, I., & Jasmon, A. (2003). *Contemporary Accounting Issues (for BAcc. Students)*. Prentice Hall.
141. SHAMIL, M. M., SHAIKH, J. M., HO, P., & KRISHNAN, A. (2022). External Pressures, Managerial Motive and Corporate Sustainability Strategy: Evidence from a Developing Economy. *Asian Journal of Accounting & Governance*, *18*.
142. Kadir, S., & Shaikh, J. M. (2023, January). The effects of e-commerce businesses to small-medium enterprises: Media techniques and technology. In *AIP Conference Proceedings* (Vol. 2643, No. 1). AIP Publishing.
143. Mungoli, Neelesh. (2023). Enhancing Conversational Engagement and Understanding of Cryptocurrency with ChatGPT: An Exploration of Applications and Challenges.
144. Mungoli, Neelesh. (2023). HybridCoin: Unifying the Advantages of Bitcoin and Ethereum in a Next-Generation Cryptocurrency.
145. Fish, R., Liang, Y., Saleeby, K., Spirnak, J., Sun, M., & Zhang, X. (2019). Dynamic characterization of arrows through stochastic perturbation. *arXiv preprint arXiv:1909.08186*.
146. Dynamic sealing using magnetorheological fluidsLiang, Y. (2015). *Design and optimization of micropumps using electrorheological and magnetorheological fluids* (Doctoral dissertation, Massachusetts Institute of Technology).
147. Liang, Y., Hosoi, A. E., Demers, M. F., Iagnemma, K. D., Alvarado, J. R., Zane, R. A., & Evzelman, M. (2019). *U.S. Patent No. 10,309,386*. Washington, DC: U.S. Patent and Trademark Office.
148. Mungoli, Neelesh. (2023). Deciphering the Blockchain: A Comprehensive Analysis of Bitcoin's Evolution, Adoption, and Future Implications.
149. Mungoli, Neelesh. (2023). Mastering Artificial Intelligence: Concepts, Algorithms, and Equations.
150. Mungoli, Neelesh. (2018). Multi-Modal Deep Learning in Heterogeneous Data Environments: A Complete Framework with Adaptive Fusion. 10.13140/RG.2.2.29819.59689.
151. Mungoli, Neelesh. (2019). Autonomous Resource Scaling and Optimization: Leveraging Machine Learning for Efficient Cloud Computing Management. 10.13140/RG.2.2.13671.52641.
152. Mungoli, N. (2023). Leveraging AI and Technology to Address the Challenges of Underdeveloped Countries. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 7(2), 214-234.
153. Mungoli, N. (2023). Exploring the Synergy of Prompt Engineering and Reinforcement Learning for Enhanced Control and Responsiveness in ChatGPT. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 7(2), 195-213.
154. Mungoli, N. (2023). Hybrid Coin: Unifying the Advantages of Bitcoin and Ethereum in a Next-Generation Cryptocurrency. INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, 7(2), 235-250.
155. Mungoli, N. (2023). Intelligent Insights: Advancements in AI Research. International Journal of Computer Science and Technology, 7(2), 251-273.

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

156. Mungoli, N. (2023). Intelligent Insights: Advancements in AI Research. International Journal of Computer Science and Technology, 7(2), 251-273.
157. Mungoli, N. (2023). Deciphering the Blockchain: A Comprehensive Analysis of Bitcoin's Evolution, Adoption, and Future Implications. arXiv preprint arXiv:2304.02655.
158. Mungoli, N. Exploring the Frontier of Deep Neural Networks: Progress, Challenges, and Future Directions. medicine, 1, 7.
159. Mungoli, N. (2023). Scalable, Distributed AI Frameworks: Leveraging Cloud Computing for Enhanced Deep Learning Performance and Efficiency. arXiv preprint arXiv:2304.13738.
160. Mungoli, N. (2023). Adaptive Ensemble Learning: Boosting Model Performance through Intelligent Feature Fusion in Deep Neural Networks. arXiv preprint arXiv:2304.02653.
161. Mungoli, N. (2023). Adaptive Feature Fusion: Enhancing Generalization in Deep Learning Models. arXiv preprint arXiv:2304.03290.
162. Ali Ahmed, H. J., Lee, T. L., & Shaikh, J. M. (2011). An investigation on asset allocation and performance measurement for unit trust funds in Malaysia using multifactor model: a post crisis period analysis. *International Journal of Managerial and Financial Accounting*, *3*(1), 22-31.
163. Shaikh, J. M., & Linh, D. T. B. (2017). Using the TFP Model to Determine Impacts of Stock Market Listing on Corporate Performance of Agri- Foods Companies in Vietnam. *Journal of Corporate Accounting & Finance*, *28*(3), 61-74.
164. Jakpar, S., Othman, M. A., & Shaikh, J. (2008). The Prospects of Islamic Banking and Finance: Lessons from the 1997 Banking Crisis in Malaysia. *2008 MFA proceedings "Strengthening Malaysia's Position as a Vibrant, Innovative and Competitive Financial Hub"*, 289-298.
165. Junaid, M. S., & Dinh Thi, B. L. (2016). Stock Market Listing Influence on Corporate Performance: Definitions and Assessment Tools.
166. Enoh, M. K. E., Ahmed, F., Muhammad, T., Yves, I., & Aslam, F. (2023). *Navigating ghaUtopian Futures*. AJPO Journals USA LLC.
167. Muhammad, T., & Munir, M. (2023). Network Automation. *European Journal of Technology*, *7*(2), 23-42.
168. Muhammad, T., Munir, M. T., Munir, M. Z., & Zafar, M. W. (2022). Integrative Cybersecurity: Merging Zero Trust, Layered Defense, and Global Standards for a Resilient Digital Future. *INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY*, *6*(4), 99-135.
169. Muhammad, T., Munir, M. T., Munir, M. Z., & Zafar, M. W. (2018). Elevating Business Operations: The Transformative Power of Cloud Computing. *INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY*, *2*(1), 1-21.
170. Yvan Jorel Ngaleu Ngoyi, & Elie Ngongang. (2023). Forex Daytrading Strategy: An Application of the Gaussian Mixture Model to Marginalized Currency pairs in Africa. *INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND*

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

TECHNOLOGY, *7*(3), 149-191. Retrieved from https://ijcst.com.pk/IJCST/article/view/279

171. Muhammad, T. (2022). A Comprehensive Study on Software-Defined Load Balancers: Architectural Flexibility & Application Service Delivery in On-Premises Ecosystems. *INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY*, *6*(1), 1-24.
172. Muhammad, T. (2019). Revolutionizing Network Control: Exploring the Landscape of Software-Defined Networking (SDN). *INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY*, *3*(1), 36-68.
173. Muhammad, T. (2021). Overlay Network Technologies in SDN: Evaluating Performance and Scalability of VXLAN and GENEVE. *INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY*, *5*(1), 39-75.
174. Ranjbaran, A., Shabankareh, M., Nazarian, A., & Seyyedamiri, N. (2022). Branding through visitors: How cultural differences affect brand co-creation in independent hotels in Iran. *Consumer Behavior in Tourism and Hospitality*, *17*(2), 161-179.
175. Nazarian, A., Atkinson, P., Foroudi, P., & Soares, A. (2021). Working together: Factors affecting the relationship between leadership and job satisfaction in Iranian HR departments. *Journal of General Management*, *46*(3), 229-245.
176. Nazarian, A., Zaeri, E., Foroudi, P., Afrouzi, A. R., & Atkinson, P. (2022). Cultural perceptions of ethical leadership and its effect on intention to leave in the independent hotel industry. *International Journal of Contemporary Hospitality Management*, *34*(1), 430-455.
177. Al-Karkhi, T. (2019). Pattern formation in PMZC plankton model. *International Journal of Basic and Applied Sciences*, *19*(2), 6-44.
178. Nazarian, A., Velayati, R., Foroudi, P., Edirisinghe, D., & Atkinson, P. (2021). Organizational justice in the hotel industry: revisiting GLOBE from a national culture perspective. *International Journal of Contemporary Hospitality Management*, *33*(12), 4418-4438.
179. Nazarian, A., Atkinson, P., Foroudi, P., & Dennis, K. (2019). Finding the right management approach in independent hotels. *International Journal of Contemporary Hospitality Management*, *31*(7), 2862-2883.
180. Foroudi, P., Marvi, R., & Nazarian, A. (2019). Whispering experience: Configuring the symmetrical and asymmetrical paths to travelers' satisfaction and passion. In *Place Branding: Connecting Tourist Experiences to Places*. Routledge.
181. Foroudi, P., Mauri, C., Dennis, C., & Melewar, T. C. (Eds.). (2019). *Place branding: Connecting tourist experiences to places*. Routledge.
182. Izadi, J., Foroudi, P., & Nazarian, A. (2021). Into the unknown: Impact of Coronavirus on UK hotel stock performance. *European Journal of International Management*.
183. Shabankareh, M., Nazarian, A., Seyyedamiri, N., Jandaghi, G., & Ranjbaran, A. (2022). Influential factors of loyalty and disloyalty of travellers towards traditional-resorts. *Anatolia*, *33*(3), 362-373.
184. Izadi Zadeh Darjezi, J., Choudhury, H., & Nazarian, A. (2017). Simulation evidence on the properties of alternative measures of working capital accruals: new evidence from

ISSN Online : 2709-5088
ISSN Print : 2709-507X
IJCST

the UK. *International Journal of Accounting & Information Management*, *25*(4), 378-394.

185. Kamalipoor, M., Akbari, M., Hejazi, S. R., & Nazarian, A. (2023). The vulnerability of technology-based business during COVID-19: an indicator-based conceptual framework. *Journal of Business & Industrial Marketing*, *38*(5), 983-999.

186. Nazarian, A., & Atkinson, P. (2015). Organisational size as a moderator of the culture-effectiveness relationship: the case of the private sector in Iran. *Organizational Cultures*, *14*(2), 1.