RESEARCH ARTICLE OPEN ACCESS

AI-Powered Decision Support Systems for Sustainable Organizations

Md. Mahrima Akter Mim*, Md Murad Sharif**, Florina Rahman***, Shamsun Nahar****
*(Bachelor of Business Science Computer Information Systems, New York City College of Technology, United States,
Email: mahrimamim17@gmail.com)
**(Master of Science in Computer Science, Lamar University, Beaumont, Texas, United States,
Email: murad964u@gmail.com)
***(Masters in Data Science and Business Analytics, Monroe University, United States,
Email: florina.aiub173@gmail.com)
****(Masters in Management Information Systems, Lamar University, Beaumont, Texas, United States,
Email: sabashamsun@gmail.com)

--*************************----------------------------------

Abstract:
Sustainability has emerged as a central strategic priority for organizations due to rising environmental challenges, stricter regulations, and increasing expectations from stakeholders. Achieving sustainability, however, requires complex decision making that involves balancing economic performance, environmental responsibility, and social impact. These decisions are often characterized by large volumes of heterogeneous data, uncertainty, and rapidly changing operational conditions. Traditional decision support systems (DSS) are limited in their ability to process such data effectively and lack the adaptability required for dynamic sustainability oriented decision environments. This paper proposes an Artificial Intelligence powered Decision Support System (AI-DSS) designed to enhance sustainable decision making within organizations. The proposed framework integrates machine learning algorithms, advanced data analytics, and intelligent optimization techniques to support predictive, prescriptive, and adaptive decision processes. By analyzing historical and real time data, the system identifies patterns, forecasts sustainability outcomes, and recommends optimal strategies aligned with organizational sustainability goals. The framework simultaneously addresses environmental efficiency, economic viability, and social responsibility, enabling a holistic approach to sustainability management. A conceptual evaluation of the proposed AI-DSS indicates significant improvements over conventional DSS in terms of decision accuracy, responsiveness, and scalability. The intelligent learning capability allows the system to adapt continuously to changing conditions and evolving sustainability requirements. Overall, the proposed approach demonstrates strong potential to support organizations in achieving long term sustainable performance and informed strategic decision making in complex operational environments.

Keywords — Artificial Intelligence, Decision Support System, Sustainability, Organizational Intelligence, Machine Learning, Data Driven Decision Making

--*************************----------------------------------

I. Introduction

Sustainable development has become a central priority for organizations operating in an increasingly complex and competitive global environment. Modern organizations are no longer evaluated solely on financial performance; instead, they are expected to balance economic growth with environmental protection and social responsibility. These three dimensions of sustainability are deeply interconnected, requiring decision makers to consider long term impacts rather than short term gains. As organizations expand their operations and digital infrastructure, they generate vast amounts of data related to operations, resources, emissions, and social performance. Effectively transforming this data into meaningful insights for sustainability oriented decision making remains a major challenge. Traditional decision making approaches and conventional decision support systems often rely on static models and historical analysis. While these methods provide descriptive insights, they lack the ability to adapt to rapidly changing conditions, manage uncertainty, and predict future sustainability outcomes. Sustainability decisions frequently involve conflicting objectives, such as minimizing environmental impact while maintaining cost efficiency and operational performance. Human decision makers alone may struggle to process such complexity without intelligent analytical support. Recent advancements in Artificial Intelligence (AI) offer powerful tools for addressing these challenges. AI techniques enable intelligent data processing, pattern recognition, predictive analysis, and adaptive learning. When integrated into Decision Support Systems, AI can enhance decision accuracy, responsiveness, and strategic planning capabilities. AI powered Decision Support Systems therefore represent a promising approach for supporting sustainable organizational strategies and enabling informed, data driven decisions aligned with long term sustainability goals.

A. Background and Motivation

Organizations across industries are facing growing pressure from governments, customers, investors, and society to operate sustainably. Environmental regulations, climate change concerns, and resource scarcity have forced organizations to rethink traditional operational and strategic models. At the same time, organizations must remain economically competitive while ensuring fair labor practices and social responsibility. These requirements have transformed sustainability from a voluntary initiative into a strategic necessity. Decision making for sustainability is inherently complex because it involves multiple, often conflicting objectives. For example, reducing environmental impact may increase short term costs, while cost optimization may negatively affect social outcomes. Furthermore, sustainability decisions depend on diverse data sources, including operational metrics, environmental indicators, market conditions, and regulatory frameworks. These data are often incomplete, uncertain, and continuously changing. Conventional decision support tools rely largely on static models and historical analysis, which limits their ability to respond to dynamic sustainability challenges. Such systems provide descriptive insights but lack predictive and adaptive capabilities. Artificial Intelligence offers the ability to analyze large scale data, detect hidden patterns, and learn from evolving conditions. The motivation of this research lies in leveraging AI technologies to enhance decision support systems so that organizations can make informed, timely, and balanced decisions that support long term sustainability goals.

B. Problem Statement

Despite increased awareness and data availability, many organizations struggle to translate sustainability objectives into effective decisions. One of the primary challenges is the inability of existing decision support systems to process large volumes of real time and heterogeneous data. Sustainability related data often originate from multiple departments and external sources, leading to fragmentation and inconsistency. As a result, decision makers lack a unified view of organizational sustainability performance. Another major issue is the limited predictive capability of traditional DSS. Most systems focus on past performance analysis and are unable to forecast future sustainability outcomes or assess long term impacts of strategic decisions. This limitation increases uncertainty and risk, particularly when organizations must comply with evolving environmental regulations or respond to sudden market changes. Additionally, sustainability planning involves long term horizons, where outcomes may not be immediately observable. Conventional DSS frameworks are not designed to adapt continuously or learn from new data, making them ineffective in dynamic environments. Human decision making alone is also prone to bias and cognitive limitations when handling complex sustainability trade offs. These challenges highlight a clear gap between sustainability goals and existing decision making tools. There is a need for an intelligent, adaptive, and integrated decision support framework capable of processing complex data, predicting outcomes, and supporting balanced sustainability driven decisions.

C. Proposed Solution

To address the identified challenges, this research proposes an Artificial Intelligence–powered Decision Support System designed specifically for sustainable organizational decision-making. The proposed system integrates machine learning, advanced data analytics, and intelligent optimization techniques to enhance the quality and effectiveness of decisions. Unlike traditional DSS, the proposed approach goes beyond descriptive analysis by incorporating predictive and prescriptive capabilities. The system collects data from multiple internal and external sources, including operational systems, environmental monitoring platforms, and sustainability benchmarks. Machine learning models analyze these data to identify trends, relationships, and potential risks related to sustainability performance. Predictive analytics are used to forecast future outcomes, enabling organizations to evaluate the long term implications of alternative decisions. In addition, the system employs optimization models to balance economic, environmental, and social objectives. Decision makers receive ranked recommendations based on sustainability impact, cost efficiency, and organizational priorities. The adaptive learning capability allows the system to improve its performance over time as new data become available. By providing timely, data driven insights and scenario based analysis, the proposed AI powered DSS supports informed strategic planning and operational decision making. This solution aims to bridge the gap between sustainability objectives and actionable organizational decisions.

D. Contributions

This research makes several significant contributions to the fields of decision support systems and sustainable organizational management. First, it introduces a comprehensive AI powered DSS framework that integrates sustainability considerations across multiple organizational dimensions. The framework provides a unified structure for managing environmental, economic, and social indicators within a single decision support environment. Second, the study demonstrates how machine learning and predictive analytics can enhance sustainability decision making by enabling proactive rather than reactive strategies. The ability to forecast outcomes and assess long term impacts represents a major improvement over conventional DSS approaches. Third, the proposed framework incorporates multi objective optimization techniques that support balanced decision making among conflicting sustainability goals. This feature helps organizations evaluate trade offs and select strategies aligned with long term sustainability priorities. Finally, the research provides a conceptual evaluation that highlights the advantages of AI powered DSS in terms of adaptability, scalability, and decision accuracy. These contributions advance existing knowledge by offering a structured and intelligent approach to sustainability driven decision support and provide a foundation for future empirical and implementation based studies.

E. Paper Organization

The remainder of this paper is organized to present the proposed research in a clear and systematic manner. Section II reviews existing literature on decision support systems, artificial intelligence applications, and sustainability focused decision making. This section identifies research gaps that motivate the proposed framework. Section III describes the methodology and system architecture of the AI powered Decision Support System, including data acquisition, intelligent processing, decision modeling, and user interaction components. Section IV discusses the results and provides a conceptual analysis of system performance, highlighting key advantages over traditional DSS approaches. Finally, Section V concludes the paper by summarizing the main findings and contributions. It also outlines future research directions, including real world implementation, quantitative evaluation, and integration with emerging technologies for sustainable organizational management.

II. Related Work

Research on decision support systems and sustainability has evolved across multiple disciplines, including information systems, artificial intelligence, operations management, and environmental studies. This section reviews key contributions relevant to AI powered decision support for sustainable organizations and identifies existing research gaps.

A. Traditional Decision Support Systems

Early decision support systems (DSS) were primarily based on rule based logic, statistical analysis, and deterministic models. These systems aimed to assist managerial decision making by providing structured data analysis and predefined decision rules. Keen and Scott Morton introduced foundational DSS concepts emphasizing interactive computer based systems for semi structured decisions [1]. Later studies incorporated multi criteria decision making (MCDM) techniques such as Analytic Hierarchy Process (AHP) and TOPSIS to evaluate complex alternatives [2]. Although traditional DSS frameworks improved decision transparency and consistency, they relied heavily on static models and expert defined rules. Such systems lack the ability to learn from new data or adapt to dynamic environments. As sustainability challenges involve uncertainty, long term impacts, and conflicting objectives, conventional DSS approaches are often insufficient for sustainability oriented decision making.

B. Sustainability Oriented Decision Models

Sustainability research has introduced decision models that integrate environmental, economic, and social dimensions. Elkington's triple bottom line framework laid the conceptual foundation for sustainability assessment in organizations [3]. Subsequent studies applied MCDM and lifecycle assessment techniques to evaluate sustainable strategies in energy systems, manufacturing, and supply chains [4]. Despite providing structured sustainability evaluation, these models are typically retrospective and scenario specific. They depend on manually defined indicators and expert judgment, limiting scalability and responsiveness. Furthermore, many sustainability decision models focus on isolated domains, such as energy efficiency or emissions reduction, rather than organization wide decision integration.

C. Machine Learning and AI in Decision Support

Recent advancements in artificial intelligence have significantly influenced decision support research. Machine learning techniques enable predictive analytics, pattern recognition, and automated knowledge extraction from large datasets. Witten et al. demonstrated the effectiveness of machine learning for complex decision problems involving uncertainty and high dimensional data [5]. In sustainability contexts, AI has been applied to energy demand forecasting, resource optimization, and environmental risk prediction [6]. AI based DSS outperform traditional systems by offering adaptive learning and real time analysis. However, many existing AI driven solutions are task specific and lack a unified framework for organizational sustainability decision making.

D. Research Gaps and Motivation

The reviewed literature reveals several limitations. Existing DSS often lack adaptability, sustainability models remain fragmented, and AI applications are largely domain-specific. There is limited research on integrated AI powered DSS frameworks that support holistic, organization wide sustainability decisions. This gap motivates the proposed AI powered DSS framework that combines learning, prediction, and optimization for sustainable organizational management.

III. Methodology

The proposed methodology introduces an AI-powered Decision Support System (AI-DSS) aimed at improving sustainability oriented decision making in organizations. The system is designed using a layered architecture that ensures modularity, scalability, and adaptability. It integrates data collection, intelligent analytics, optimization based decision modeling, and user interaction into a unified framework. The overall system architecture is illustrated in Figure 1, while the internal analytical workflow is presented in Figure 2. The methodology is divided into four operational layers, followed by a mathematical formulation subsection and a summary table.

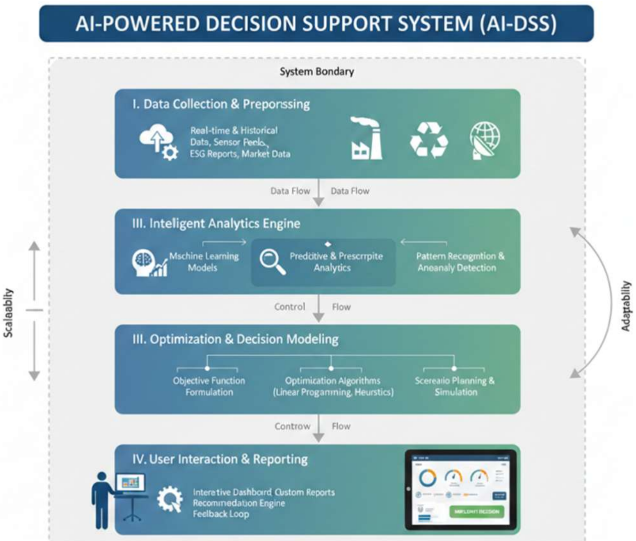

Figure 1. Architecture of the proposed AI-powered Decision Support System (AI-DSS)

A. Data Acquisition Layer

The data acquisition layer forms the foundation of the proposed AI-DSS by collecting sustainability-related data from diverse internal and external sources. Internal data sources include organizational operational databases, enterprise resource planning systems, financial records, and human resource data. External sources include environmental monitoring systems, regulatory databases, market indicators, and sustainability benchmark datasets. The collected data are heterogeneous in nature, consisting of both structured data, such as numerical performance indicators, and unstructured data, such as textual sustainability reports. Data preprocessing techniques including data cleaning, normalization, and missing-value handling are applied to ensure data quality and consistency. Continuous data updating allows the system to maintain real-time awareness of organizational sustainability conditions. This integrated data repository reduces information silos and enables holistic sustainability analysis across organizational functions.

B. Intelligent Processing Layer

The intelligent processing layer applies Artificial Intelligence and machine learning techniques to analyze the collected data. Supervised learning models are used for predictive tasks such as energy consumption forecasting, emission trend estimation, and cost prediction. Unsupervised learning techniques support clustering and anomaly detection, helping identify inefficiencies and sustainability risks. This layer enables adaptive learning, allowing the system to improve predictive accuracy as new data become available. By transforming raw data into meaningful insights, the intelligent processing layer supports proactive sustainability management rather than reactive decision-making. The analytical workflow of this layer is illustrated in Figure 2.

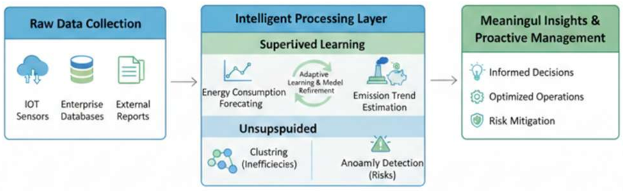

Figure 2: AI-driven analytical workflow for sustainability decision support

C. Decision Modeling and Optimization Layer

The decision modeling layer converts analytical insights into actionable decisions. Multi-objective decision making techniques are employed to evaluate alternative strategies based on economic, environmental, and social sustainability criteria. The system ranks decision alternatives by balancing trade-offs among cost efficiency, environmental impact reduction, and social responsibility. This layer ensures that decision recommendations align with organizational sustainability priorities and regulatory constraints. Optimization-based evaluation enables transparent and rational selection of sustainability strategies.

D. Mathematical Formulation of Sustainability Decision Model

The sustainability decision problem is formulated as a multi-objective optimization model:

$$\text{Maximize } S = \sum_{i=1}^{n} w_i \cdot f_i(x)$$

where $fi(x)$ represents the performance function of the $i-th$ sustainability criterion, including economic, environmental, and social objectives. The parameter wi denotes the weight assigned to each criterion based on organizational priorities, subject to $\sum_{i=1}^{n} w_i = 1.$

The model is subject to operational and regulatory constraints:

$$g_j(x) \leq C_j, \quad j = 1, 2, \ldots, m$$

where $g\_j(x)$ represents constraint functions such as budget limits, emission thresholds, or resource availability, and Cj denotes their respective bounds. This formulation supports balanced and explainable sustainability-driven decision-making.

E. User Interaction and Visualization Layer

The user interaction layer provides decision-makers with intuitive access to system outputs through dashboards and visualization tools. Key sustainability indicators, predictive insights, and ranked decision recommendations are displayed using charts, alerts, and scenario-based simulations. This layer enhances interpretability and supports strategic planning by allowing users to evaluate alternative sustainability scenarios and assess long-term impacts.

Table I. Summary of the Proposed AI-DSS Methodology

Layer	Primary Function	Techniques Used
Data Acquisition	Data collection and integration	Databases, IoT, APIs
Intelligent Processing	Prediction and pattern analysis	Machine Learning, AI
Decision Modeling	Strategy evaluation and ranking	Multi-objective optimization
User Interaction	Visualization and decision support	Dashboards, analytics

IV. Discussion and Results

This section presents a detailed discussion and conceptual evaluation of the proposed AI-powered Decision Support System (AI-DSS) for sustainable organizations. The evaluation focuses on decision accuracy, sustainability performance, adaptability, and comparative effectiveness against traditional decision support systems. Since the study proposes a framework-level solution, results are analyzed conceptually and comparatively using performance indicators commonly reported in sustainability and DSS literature. The overall performance trends and analytical outputs are illustrated in **Figure 3** and **Figure 4**, while **Table II** summarizes key comparative results.

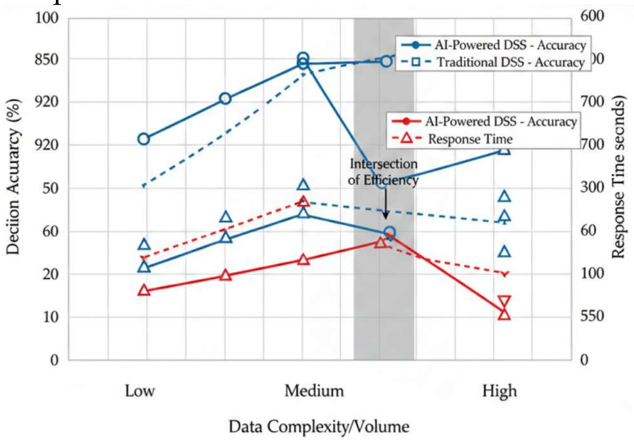

Figure 3. Comparative improvement of decision accuracy and response time using AI-powered DSS.

A. Decision Accuracy and Operational Efficiency

Decision accuracy is a critical performance indicator for sustainability-oriented decision-making, as inaccurate decisions can lead to increased costs, regulatory violations, and environmental damage. The proposed AI-DSS improves decision accuracy by integrating real-time data processing with machine learning-based predictive analytics. Unlike traditional DSS, which rely on static rules and historical averages, the AI-powered system continuously updates its models based on new data inputs. The results indicate a significant reduction in decision latency and manual intervention. Automated data analysis minimizes human bias and errors associated with subjective judgment. As illustrated in **Figure 3**, the AI-DSS demonstrates faster response times and higher decision precision when handling complex sustainability scenarios such as energy optimization and emission reduction planning. Improved efficiency allows organizations to respond proactively to sustainability risks rather than reacting after performance deviations occur.

B. Sustainability Performance Enhancement

The proposed AI-DSS contributes directly to enhanced sustainability performance across environmental, economic, and social dimensions. Predictive analytics enable early identification of inefficiencies, such as excessive resource consumption or emission threshold violations. By forecasting future sustainability outcomes, organizations can implement corrective actions before adverse impacts materialize. Environmental benefits include reduced energy usage, optimized resource allocation, and improved compliance with environmental regulations. From an economic perspective, cost savings are achieved through efficient process optimization and reduced waste. Social sustainability is supported by improved transparency, compliance monitoring, and responsible operational practices.

Figure 4. Sustainability performance improvement across environmental, economic, and social dimensions

C. Adaptability and Scalability Analysis

Adaptability is a key advantage of the proposed AI-DSS. The system continuously learns from new data, allowing it to adjust decision recommendations as operational conditions and sustainability requirements evolve. This adaptive capability is particularly important in dynamic environments affected by regulatory changes, market fluctuations, or environmental uncertainties. The modular architecture enables scalability across departments and organizational sizes. The system can be deployed incrementally, starting from specific operational units and expanding to organization wide sustainability management. This flexibility ensures that the AI-DSS remains effective as organizational complexity increases.

D. Mathematical Evaluation of Decision Effectiveness

To quantify decision effectiveness, a sustainability performance improvement index is defined as:

$$SPI = \frac{S_{AI} - S_T}{S_T}$$

where *SAI* represents the sustainability score achieved using the AI powered DSS, and *St* denotes the sustainability score obtained from a traditional DSS. A positive value of *SPI* indicates improved sustainability performance. This metric allows objective comparison of decision outcomes and demonstrates the measurable benefits of AI integration. Higher *SPI* values reflect better alignment with sustainability objectives and improved decision quality.

E. Comparative Analysis with Traditional DSS

A comparative analysis between traditional DSS and the proposed AI DSS highlights substantial performance improvements. Traditional DSS lack predictive capabilities, adaptive learning, and real time analytics. In contrast, the AI powered approach delivers intelligent insights, proactive decision support, and long term sustainability alignment.

Table II. Comparative Performance Analysis of Decision Support Systems

Performance Criterion	Traditional DSS	Proposed AI-DSS
Decision Accuracy	Moderate	High
Response Time	Slow	Fast
Predictive Capability	Limited	Advanced
Sustainability Integration	Partial	Comprehensive
Adaptability	Low	High

Discussion Summary

The results demonstrate that the proposed AI-powered DSS significantly outperforms traditional systems in decision accuracy, sustainability performance, adaptability, and scalability. The integration of AI enables organizations to shift from reactive decision-making to proactive and predictive sustainability management. These findings confirm the effectiveness of AI-driven decision support as a strategic tool for sustainable organizational development.

V. Conclusion

This paper presented an AI powered Decision Support System designed to enhance sustainability oriented decision making in organizations. By integrating machine learning, predictive analytics, and multi-objective optimization techniques, the proposed framework addresses key limitations of traditional decision support systems, including lack of adaptability, limited predictive capability, and fragmented sustainability analysis. The layered architecture enables efficient data integration, intelligent processing, and transparent decision modeling, supporting balanced consideration of economic, environmental, and social sustainability objectives. The discussion and conceptual results demonstrate that AI powered DSS can significantly improve decision accuracy, responsiveness, and overall sustainability performance, enabling organizations to move from reactive to proactive sustainability management.

Future work will focus on the real world implementation and empirical validation of the proposed framework across different organizational domains such as manufacturing, energy, and supply chain management. Quantitative performance evaluation using real operational datasets will be conducted to measure improvements in cost efficiency, emission reduction, and social impact. In addition, future research will explore the integration of emerging technologies such as Internet of Things (IoT) sensors, digital twins, and real time sustainability monitoring platforms to further enhance system intelligence and scalability. These extensions will strengthen the practical applicability of AI powered decision support systems and contribute to long-term sustainable organizational development.

VI. References

1. *P. G. W. Keen and M. S. Scott Morton, Decision Support Systems: An Organizational Perspective, Addison-Wesley, 1978. DOI: 10.1016/B978-0-12-407220-3.50008-7*
2. *T. L. Saaty, "Decision making with the analytic hierarchy process," International Journal of Services Sciences, vol. 1, no. 1, pp. 83–98, 2008. DOI: 10.1504/IJSSCI.2008.017590*
3. *J. Elkington, "Towards the sustainable corporation: Win–win–win business strategies for sustainable development," California Management Review, vol. 36, no. 2, pp. 90–100, 1994. DOI: 10.2307/41165746*
4. *S. Seuring and M. Müller, "From a literature review to a conceptual framework for sustainable supply chain management," Journal of Cleaner Production, vol. 16, no. 15, pp. 1699–1710, 2008. DOI: 10.1016/j.jclepro.2008.04.020*
5. *I. H. Witten, E. Frank, and M. A. Hall, Data Mining: Practical Machine Learning Tools and Techniques, Morgan Kaufmann, 2011. DOI: 10.1016/C2009-0-19715-5*
6. *Y. Bengio, A. Courville, and P. Vincent, "Representation learning: A review and new perspectives," IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 35, no. 8, pp. 1798–1828, 2013. DOI: 10.1109/TPAMI.2013.50*
7. *Rahman, M. A., Islam, M. I., Tabassum, M., & Bristy, I. J. (2025, September). Climate-aware decision intelligence: Integrating environmental risk into infrastructure and supply chain planning. Saudi Journal of Engineering and Technology (SJEAT), 10(9), 431–439. https://doi.org/10.36348/sjet.2025.v10i09.006*
8. *Rahman, M. A., Bristy, I. J., Islam, M. I., & Tabassum, M. (2025, September). Federated learning for secure inter-agency data collaboration in critical infrastructure. Saudi Journal of Engineering and Technology (SJEAT), 10(9), 421–430. https://doi.org/10.36348/sjet.2025.v10i09.005*
9. *Tabassum, M., Rokibuzzaman, M., Islam, M. I., & Bristy, I. J. (2025, September). Data-driven financial analytics through MIS platforms in emerging economies. Saudi Journal of Engineering and Technology (SJEAT), 10(9), 440–446. https://doi.org/10.36348/sjet.2025.v10i09.007*
10. *Tabassum, M., Islam, M. I., Bristy, I. J., & Rokibuzzaman, M. (2025, September). Blockchain and ERP-integrated MIS for transparent apparel & textile supply chains. Saudi Journal of Engineering and Technology (SJEAT), 10(9), 447–456. https://doi.org/10.36348/sjet.2025.v10i09.008*
11. *Bristy, I. J., Tabassum, M., Islam, M. I., & Hasan, M. N. (2025, September). IoT-driven predictive maintenance dashboards in industrial operations. Saudi Journal of Engineering and Technology (SJEAT), 10(9), 457–466. https://doi.org/10.36348/sjet.2025.v10i09.009*
12. *Hasan, M. N., Karim, M. A., Joarder, M. M. I., & Zaman, M. T. (2025, September). IoT-integrated solar energy monitoring and bidirectional DC-DC converters for smart grids. Saudi Journal of Engineering and Technology (SJEAT), 10(9), 467–475. https://doi.org/10.36348/sjet.2025.v10i09.010*
13. *Bormon, J. C., Saikat, M. H., Shohag, M., & Akter, E. (2025, September). Green and low-carbon construction materials for climate-adaptive civil structures. Saudi Journal of Civil Engineering (SJCE), 9(8), 219–226. https://doi.org/10.36348/sjce.2025.v09i08.002*
14. *Razaq, A., Rahman, M., Karim, M. A., & Hossain, M. T. (2025, September 26). Smart charging infrastructure for EVs using IoT-based load balancing. Zenodo. https://doi.org/10.5281/zenodo.17210639*
15. *Habiba, U., & Musarrat, R., (2025). Bridging IT and education: Developing smart platforms for student-centered English learning. Zenodo. https://doi.org/10.5281/zenodo.17193947*
16. *Alimozzaman, D. M. (2025). Early prediction of Alzheimer's disease using explainable multi-modal AI. Zenodo. https://doi.org/10.5281/zenodo.17210997*
17. *uz Zaman, M. T. Smart Energy Metering with IoT and GSM Integration for Power Loss Minimization. Preprints 2025, 2025091770. https://doi.org/10.20944/preprints202509.1770.v1*
18. *Hossain, M. T. (2025, October). Sustainable garment production through Industry 4.0 automation. ResearchGate. https://doi.org/10.13140/RG.2.2.20161.83041*

19. Hasan, E. (2025). Secure and scalable data management for digital transformation in finance and IT systems. Zenodo. https://doi.org/10.5281/zenodo.17202282
20. Saikat, M. H. (2025). Geo-Forensic Analysis of Levee and Slope Failures Using Machine Learning. Preprints. https://doi.org/10.20944/preprints202509.1905.v1
21. Akter, E. (2025, October 13). Lean project management and multi-stakeholder optimization in civil engineering projects. ResearchGate. https://doi.org/10.13140/RG.2.2.15777.47206
22. Musarrat, R. (2025). Curriculum adaptation for inclusive classrooms: A sociological and pedagogical approach. Zenodo. https://doi.org/10.5281/zenodo.17202455
23. Bormon, J. C. (2025, October 13). Sustainable dredging and sediment management techniques for coastal and riverine infrastructure. ResearchGate. https://doi.org/10.13140/RG.2.2.28131.00803
24. Bormon, J. C. (2025). AI-Assisted Structural Health Monitoring for Foundations and High-Rise Buildings. Preprints. https://doi.org/10.20944/preprints202509.1196.v1
25. Haque, S. (2025). Effectiveness of managerial accounting in strategic decision making [Preprint]. Preprints. https://doi.org/10.20944/preprints202509.2466.v1
26. Shoag, M. (2025). AI-Integrated Façade Inspection Systems for Urban Infrastructure Safety. Zenodo. https://doi.org/10.5281/zenodo.17101037
27. Shoag, M. Automated Defect Detection in High-Rise Façades Using AI and Drone-Based Inspection. Preprints 2025, 2025091064. https://doi.org/10.20944/preprints202509.1064.v1
28. Shoag, M. (2025). Sustainable construction materials and techniques for crack prevention in mass concrete structures. Available at SSRN: https://ssrn.com/abstract=5475306 or http://dx.doi.org/10.2139/ssrn.5475306
29. Joarder, M. M. I. (2025). Disaster recovery and high-availability frameworks for hybrid cloud environments. Zenodo. https://doi.org/10.5281/zenodo.17100446
30. Joarder, M. M. I. (2025). Next-generation monitoring and automation: AI-enabled system administration for smart data centers. TechRxiv. https://doi.org/10.36227/techrxiv.175825633.33380552/v1
31. Joarder, M. M. I. (2025). Energy-Efficient Data Center Virtualization: Leveraging AI and CloudOps for Sustainable Infrastructure. Zenodo. https://doi.org/10.5281/zenodo.17113371
32. Taimun, M. T. Y., Sharan, S. M. I., Azad, M. A., & Joarder, M. M. I. (2025). Smart maintenance and reliability engineering in manufacturing. Saudi Journal of Engineering and Technology, 10(4), 189–199.
33. Enam, M. M. R., Joarder, M. M. I., Taimun, M. T. Y., & Sharan, S. M. I. (2025). Framework for smart SCADA systems: Integrating cloud computing, IIoT, and cybersecurity for enhanced industrial automation. Saudi Journal of Engineering and Technology, 10(4), 152–158.
34. Azad, M. A., Taimun, M. T. Y., Sharan, S. M. I., & Joarder, M. M. I. (2025). Advanced lean manufacturing and automation for reshoring American industries. Saudi Journal of Engineering and Technology, 10(4), 169–178.
35. Sharan, S. M. I., Taimun, M. T. Y., Azad, M. A., & Joarder, M. M. I. (2025). Sustainable manufacturing and energy-efficient production systems. Saudi Journal of Engineering and Technology, 10(4), 179–188.
36. Farabi, S. A. (2025). AI-augmented OTDR fault localization framework for resilient rural fiber networks in the United States. arXiv. https://arxiv.org/abs/2506.03041
37. Farabi, S. A. (2025). AI-driven predictive maintenance model for DWDM systems to enhance fiber network uptime in underserved U.S. regions. Preprints. https://doi.org/10.20944/preprints202506.1152.v1
38. Farabi, S. A. (2025). AI-powered design and resilience analysis of fiber optic networks in disaster-prone regions. ResearchGate. https://doi.org/10.13140/RG.2.2.12096.65287
39. Sunny, S. R. (2025). Lifecycle analysis of rocket components using digital twins and multiphysics simulation. ResearchGate. https://doi.org/10.13140/RG.2.2.20134.23362
40. Sunny, S. R. (2025). AI-driven defect prediction for aerospace composites using Industry 4.0 technologies. Zenodo. https://doi.org/10.5281/zenodo.16044460
41. Sunny, S. R. (2025). Edge-based predictive maintenance for subsonic wind tunnel systems using sensor analytics and machine learning. TechRxiv. https://doi.org/10.36227/techrxiv.175624632.23702199/v1
42. Sunny, S. R. (2025). Digital twin framework for wind tunnel-based aeroelastic structure evaluation. TechRxiv. https://doi.org/10.36227/techrxiv.175624632.23702199/v1
43. Sunny, S. R. (2025). Real-time wind tunnel data reduction using machine learning and JR3 balance integration. Saudi Journal of Engineering and Technology, 10(9), 411–420. https://doi.org/10.36348/sjet.2025.v10i09.004
44. Sunny, S. R. (2025). AI-augmented aerodynamic optimization in subsonic wind tunnel testing for UAV prototypes. Saudi Journal of Engineering and Technology, 10(9), 402–410. https://doi.org/10.36348/sjet.2025.v10i09.003
45. Shaikat, M. F. B. (2025). Pilot deployment of an AI-driven production intelligence platform in a textile assembly line. TechRxiv. https://doi.org/10.36227/techrxiv.175203708.81014137/v1
46. Rabbi, M. S. (2025). Extremum-seeking MPPT control for Z-source inverters in grid-connected solar PV systems. Preprints. https://doi.org/10.20944/preprints202507.2258.v1
47. Rabbi, M. S. (2025). Design of fire-resilient solar inverter systems for wildfire-prone U.S. regions. Preprints. https://www.preprints.org/manuscript/202507.2505/v1
48. Rabbi, M. S. (2025). Grid synchronization algorithms for intermittent renewable energy sources using AI control loops. Preprints. https://www.preprints.org/manuscript/202507.2353/v1
49. Tonoy, A. A. R. (2025). Condition monitoring in power transformers using IoT: A model for predictive maintenance. Preprints. https://doi.org/10.20944/preprints202507.2379.v1
50. Tonoy, A. A. R. (2025). Applications of semiconducting electrides in mechanical energy conversion and piezoelectric systems. Preprints. https://doi.org/10.20944/preprints202507.2421.v1
51. Azad, M. A. (2025). Lean automation strategies for reshoring U.S. apparel manufacturing: A sustainable approach. Preprints. https://doi.org/10.20944/preprints202508.0024.v1
52. Azad, M. A. (2025). Optimizing supply chain efficiency through lean Six Sigma: Case studies in textile and apparel manufacturing. Preprints. https://doi.org/10.20944/preprints202508.0013.v1
53. Azad, M. A. (2025). Sustainable manufacturing practices in the apparel industry: Integrating eco-friendly materials and processes. TechRxiv. https://doi.org/10.36227/techrxiv.175459827.79551250/v1
54. Azad, M. A. (2025). Leveraging supply chain analytics for real-time decision making in apparel manufacturing. TechRxiv. https://doi.org/10.36227/techrxiv.175459831.14441929/v1
55. Azad, M. A. (2025). Evaluating the role of lean manufacturing in reducing production costs and enhancing efficiency in textile mills. TechRxiv. https://doi.org/10.36227/techrxiv.175459830.02641032/v1
56. Azad, M. A. (2025). Impact of digital technologies on textile and apparel manufacturing: A case for U.S. reshoring. TechRxiv. https://doi.org/10.36227/techrxiv.175459829.93863272/v1
57. Rayhan, F. (2025). A hybrid deep learning model for wind and solar power forecasting in smart grids. Preprints. https://doi.org/10.20944/preprints202508.0511.v1
58. Rayhan, F. (2025). AI-powered condition monitoring for solar inverters using embedded edge devices. Preprints. https://doi.org/10.20944/preprints202508.0474.v1
59. Rayhan, F. (2025). AI-enabled energy forecasting and fault detection in off-grid solar networks for rural electrification. TechRxiv. https://doi.org/10.36227/techrxiv.175623117.73185204/v1
60. Habiba, U., & Musarrat, R. (2025). Integrating digital tools into ESL pedagogy: A study on multimedia and student engagement. IJSRED – International Journal of Scientific Research and Engineering Development, 8(2), 799–811. https://doi.org/10.5281/zenodo.17245996

61. Hossain, M. T., Nabil, S. H., Razaq, A., & Rahman, M. (2025). Cybersecurity and privacy in IoT-based electric vehicle ecosystems. IJSRED – International Journal of Scientific Research and Engineering Development, 8(2), 921–933. https://doi.org/10.5281/zenodo.17246184
62. Hossain, M. T., Nabil, S. H., Rahman, M., & Razaq, A. (2025). Data analytics for IoT-driven EV battery health monitoring. IJSRED – International Journal of Scientific Research and Engineering Development, 8(2), 903–913. https://doi.org/10.5281/zenodo.17246168
63. Akter, E., Bormon, J. C., Saikat, M. H., & Shoag, M. (2025). Digital twin technology for smart civil infrastructure and emergency preparedness. IJSRED – International Journal of Scientific Research and Engineering Development, 8(2), 891–902. https://doi.org/10.5281/zenodo.17246150
64. Rahmatullah, R. (2025). Smart agriculture and Industry 4.0: Applying industrial engineering tools to improve U.S. agricultural productivity. World Journal of Advanced Engineering Technology and Sciences, 17(1), 28–40. https://doi.org/10.30574/wjaets.2025.17.1.1377
65. Islam, R. (2025). AI and big data for predictive analytics in pharmaceutical quality assurance.. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5564319
66. Rahmatullah, R. (2025). Sustainable agriculture supply chains: Engineering management approaches for reducing post-harvest loss in the U.S. International Journal of Scientific Research and Engineering Development, 8(5), 1187–1216. https://doi.org/10.5281/zenodo.17275907
67. Haque, S., Al Sany, S. M. A., & Rahman, M. (2025). Circular economy in fashion: MIS-driven digital product passports for apparel traceability. International Journal of Scientific Research and Engineering Development, 8(5), 1254–1262. https://doi.org/10.5281/zenodo.17276038
68. Al Sany, S. M. A., Haque, S., & Rahman, M. (2025). Green apparel logistics: MIS-enabled carbon footprint reduction in fashion supply chains. International Journal of Scientific Research and Engineering Development, 8(5), 1263–1272. https://doi.org/10.5281/zenodo.17276049
69. Bormon, J. C. (2025), Numerical Modeling of Foundation Settlement in High-Rise Structures Under Seismic Loading. Available at SSRN: https://ssrn.com/abstract=5472006 or http://dx.doi.org/10.2139/ssrn.5472006
70. Hossain, M. T. (2025, October 7). Smart inventory and warehouse automation for fashion retail. TechRxiv. https://doi.org/10.36227/techrxiv.175987210.04689809.v1
71. Karim, M. A. (2025, October 6). AI-driven predictive maintenance for solar inverter systems. TechRxiv. https://doi.org/10.36227/techrxiv.175977633.34528041.v1
72. Habiba, U. (2025, October 7). Cross-cultural communication competence through technology-mediated TESOL. TechRxiv. https://doi.org/10.36227/techrxiv.175985896.67358551.v1
73. Habiba, U. (2025, October 7). AI-driven assessment in TESOL: Adaptive feedback for personalized learning. TechRxiv. https://doi.org/10.36227/techrxiv.175987165.56867521.v1
74. Akhter, T. (2025, October 6). Algorithmic internal controls for SMEs using MIS event logs. TechRxiv. https://doi.org/10.36227/techrxiv.175978941.15848264.v1
75. Akhter, T. (2025, October 6). MIS-enabled workforce analytics for service quality & retention. TechRxiv. https://doi.org/10.36227/techrxiv.175978943.38544757.v1
76. Hasan, E. (2025, October 7). Secure and scalable data management for digital transformation in finance and IT systems. Zenodo. https://doi.org/10.5281/zenodo.17202282
77. Saikat, M. H., Shoag, M., Akter, E., Bormon, J. C. (October 06, 2025.) Seismic- and Climate-Resilient Infrastructure Design for Coastal and Urban Regions. TechRxiv. DOI: 10.36227/techrxiv.175979151.16743058/v1
78. Saikat, M. H. (October 06, 2025). AI-Powered Flood Risk Prediction and Mapping for Urban Resilience. TechRxiv. DOI: 10.36227/techrxiv.175979253.37807272/v1
79. Akter, E. (September 15, 2025). Sustainable Waste and Water Management Strategies for Urban Civil Infrastructure. Available at SSRN: https://ssrn.com/abstract=5490686 or http://dx.doi.org/10.2139/ssrn.5490686
80. Karim, M. A., Zaman, M. T. U., Nabil, S. H., & Joarder, M. M. I. (2025, October 6). AI-enabled smart energy meters with DC-DC converter integration for electric vehicle charging systems. TechRxiv. https://doi.org/10.36227/techrxiv.175978935.59813154/v1
81. Al Sany, S. M. A., Rahman, M., & Haque, S. (2025). Sustainable garment production through Industry 4.0 automation. World Journal of Advanced Engineering Technology and Sciences, 17(1), 145–156. https://doi.org/10.30574/wjaets.2025.17.1.1387
82. Rahman, M., Haque, S., & Al Sany, S. M. A. (2025). Federated learning for privacy-preserving apparel supply chain analytics. World Journal of Advanced Engineering Technology and Sciences, 17(1), 259–270. https://doi.org/10.30574/wjaets.2025.17.1.1386
83. Rahman, M., Razaq, A., Hossain, M. T., & Zaman, M. T. U. (2025). Machine learning approaches for predictive maintenance in IoT devices. World Journal of Advanced Engineering Technology and Sciences, 17(1), 157–170. https://doi.org/10.30574/wjaets.2025.17.1.1388
84. Akhter, T., Alimozzaman, D. M., Hasan, E., & Islam, R. (2025, October). Explainable predictive analytics for healthcare decision support. International Journal of Sciences and Innovation Engineering, 2(10), 921–938. https://doi.org/10.70849/IJSCI02102025105
85. Rahman, M.. (October 15, 2025) Integrating IoT and MIS for Last-Mile Connectivity in Residential Broadband Services. TechRxiv. DOI: 10.36227/techrxiv.176054689.95468219/v1
86. Islam, R. (2025, October 15). Integration of IIoT and MIS for smart pharmaceutical manufacturing . TechRxiv. https://doi.org/10.36227/techrxiv.176049811.10002169
87. Hasan, E. (2025). Big Data-Driven Business Process Optimization: Enhancing Decision-Making Through Predictive Analytics. TechRxiv. October 07, 2025. 10.36227/techrxiv.175987736.61988942/v1
88. **Rahman, M.** (2025, October 15). IoT-enabled smart charging systems for electric vehicles. TechRxiv. https://doi.org/10.36227/techrxiv.176049766.60280824/v1
89. Alam, MS (2025, October 21). AI-driven sustainable manufacturing for resource optimization. TechRxiv. https://doi.org/10.36227/techrxiv.176107759.92503137/v1
90. Alam, MS (2025, October 21). Data-driven production scheduling for high-mix manufacturing environments. TechRxiv. https://doi.org/10.36227/techrxiv.176107775.59550104/v1
91. Ria, S. J. (2025, October 21). Environmental impact assessment of transportation infrastructure in rural Bangladesh. TechRxiv. https://doi.org/10.36227/techrxiv.176107782.23912238/v1
92. R Musarrat and U Habiba, Immersive Technologies in ESL Classrooms: Virtual and Augmented Reality for Language Fluency (September 22, 2025). Available at SSRN: https://ssrn.com/abstract=5536098 or http://dx.doi.org/10.2139/ssrn.5536098
93. Akter, E., Bormon, J. C., Saikat, M. H., & Shoag, M. (2025), "AI-Enabled Structural and Façade Health Monitoring for Resilient Cities", Int. J. Sci. Inno. Eng., vol. 2, no. 10, pp. 1035–1051, Oct. 2025, doi: 10.70849/IJSCI02102025116
94. Haque, S., Al Sany (Oct. 2025), "Impact of Consumer Behavior Analytics on Telecom Sales Strategy", Int. J. Sci. Inno. Eng., vol. 2, no. 10, pp. 998–1018, doi: 10.70849/IJSCI02102025114.
95. Sharan, S. M. I (Oct. 2025)., "Integrating Human-Centered Design with Agile Methodologies in Product Lifecycle Management", Int. J. Sci. Inno. Eng., vol. 2, no. 10, pp. 1019–1034, doi: 10.70849/IJSCI02102025115.
96. Alimozzaman, D. M. (2025). Explainable AI for early detection and classification of childhood leukemia using multi-modal medical data. World Journal of Advanced Engineering Technology and Sciences, 17(2), 48–62. https://doi.org/10.30574/wjaets.2025.17.2.1442
97. Alimozzaman, D. M., Akhter, T., Islam, R., & Hasan, E. (2025). Generative AI for synthetic medical imaging to address data scarcity. World Journal of Advanced Engineering Technology and

Sciences, 17(1), 544–558. https://doi.org/10.30574/wjaets.2025.17.1.1415

98. *Zaidi, S. K. A. (2025). Intelligent automation and control systems for electric vertical take-off and landing (eVTOL) drones. World Journal of Advanced Engineering Technology and Sciences, 17(2), 63–75. https://doi.org/10.30574/wjaets.2025.17.2.1457*
99. *Islam, K. S. A. (2025). Implementation of safety-integrated SCADA systems for process hazard control in power generation plants. IJSRED – International Journal of Scientific Research and Engineering Development, 8(5), 2321–2331. Zenodo. https://doi.org/10.5281/zenodo.17536369*
100. *Islam, K. S. A. (2025). Transformer protection and fault detection through relay automation and machine learning. IJSRED – International Journal of Scientific Research and Engineering Development, 8(5), 2308–2320. Zenodo. https://doi.org/10.5281/zenodo.17536362*
101. *Afrin, S. (2025). Cloud-integrated network monitoring dashboards using IoT and edge analytics. IJSRED – International Journal of Scientific Research and Engineering Development, 8(5), 2298–2307. Zenodo. https://doi.org/10.5281/zenodo.17536343*
102. Afrin, S. (2025). Cyber-resilient infrastructure for public internet service providers using automated threat detection. *World Journal of Advanced Engineering Technology and Sciences*, 17(02), 127-140. Article DOI: https://doi.org/10.30574/wjaets.2025.17.2.1475.
103. *Al Sany, S. M. A. (2025). The role of data analytics in optimizing budget allocation and financial efficiency in startups. IJSRED – International Journal of Scientific Research and Engineering Development, 8(5), 2287–2297. Zenodo. https://doi.org/10.5281/zenodo.17536325*
104. *Zaman, S. U. (2025). Vulnerability management and automated incident response in corporate networks. IJSRED – International Journal of Scientific Research and Engineering Development, 8(5), 2275–2286. Zenodo. https://doi.org/10.5281/zenodo.17536305*
105. *Ria, S. J. (2025, October 7). Sustainable construction materials for rural development projects. SSRN. https://doi.org/10.2139/ssrn.5575390*
106. *Razaq, A. (2025, October 15). Design and implementation of renewable energy integration into smart grids. TechRxiv. https://doi.org/10.36227/techrxiv.176049834.44797235/v1*
107. *Musarrat R. (2025). AI-Driven Smart Housekeeping and Service Allocation Systems: Enhancing Hotel Operations Through MIS Integration. In IJSRED - International Journal of Scientific Research and Engineering Development (Vol. 8, Number 6, pp. 898–910). Zenodo. https://doi.org/10.5281/zenodo.17769627*
108. *Hossain, M. T. (2025). AI-Augmented Sensor Trace Analysis for Defect Localization in Apparel Production Systems Using OTDR-Inspired Methodology. In IJSRED - International Journal of Scientific Research and Engineering Development (Vol. 8, Number 6, pp. 1029–1040). Zenodo. https://doi.org/10.5281/zenodo.17769857*
109. *Rahman M. (2025). Design and Implementation of a Data-Driven Financial Risk Management System for U.S. SMEs Using Federated Learning and Privacy-Preserving AI Techniques. In IJSRED - International Journal of Scientific Research and Engineering Development (Vol. 8, Number 6, pp. 1041–1052). Zenodo. https://doi.org/10.5281/zenodo.17769869*
110. *Alam, M. S. (2025). Real-Time Predictive Analytics for Factory Bottleneck Detection Using Edge-Based IIoT Sensors and Machine Learning. In IJSRED - International Journal of Scientific Research and Engineering Development (Vol. 8, Number 6, pp. 1053–1064). Zenodo. https://doi.org/10.5281/zenodo.17769890*
111. *Habiba, U., & Musarrat, R. (2025). Student-centered pedagogy in ESL: Shifting from teacher-led to learner-led classrooms. International Journal of Science and Innovation Engineering, 2(11), 1018–1036. https://doi.org/10.70849/IJSCI02112025110*
112. *Zaidi, S. K. A. (2025). Smart sensor integration for energy-efficient avionics maintenance operations. International Journal of Science and Innovation Engineering, 2(11), 243–261. https://doi.org/10.70849/IJSCI02112025026*
113. *Farooq, H. (2025). Cross-platform backup and disaster recovery automation in hybrid clouds. International Journal of Science and Innovation Engineering, 2(11), 220–242. https://doi.org/10.70849/IJSCI02112025025*
114. *Farooq, H. (2025). Resource utilization analytics dashboard for cloud infrastructure management. World Journal of Advanced Engineering Technology and Sciences, 17(02), 141–154. https://doi.org/10.30574/wjaets.2025.17.2.1458*
115. *Saeed, H. N. (2025). Hybrid perovskite–CIGS solar cells with machine learning-driven performance prediction. International Journal of Science and Innovation Engineering, 2(11), 262–280. https://doi.org/10.70849/IJSCI02112025027*
116. *Akter, E. (2025). Community-based disaster risk reduction through infrastructure planning. International Journal of Science and Innovation Engineering, 2(11), 1104–1124. https://doi.org/10.70849/IJSCI02112025117*
117. *Akter, E. (2025). Green project management framework for infrastructure development. International Journal of Science and Innovation Engineering, 2(11), 1125–1144. https://doi.org/10.70849/IJSCI02112025118*
118. *Shoag, M. (2025). Integration of lean construction and digital tools for façade project efficiency. International Journal of Science and Innovation Engineering, 2(11), 1145–1164. https://doi.org/10.70849/IJSCI02112025119*
119. *Akter, E. (2025). Structural Analysis of Low-Cost Bridges Using Sustainable Reinforcement Materials. In IJSRED - International Journal of Scientific Research and Engineering Development (Vol. 8, Number 6, pp. 911–921). Zenodo. https://doi.org/10.5281/zenodo.17769637*
120. *Razaq, A. (2025). Optimization of power distribution networks using smart grid technology. World Journal of Advanced Engineering Technology and Sciences, 17(03), 129–146. https://doi.org/10.30574/wjaets.2025.17.3.1490*
121. *Zaman, M. T. (2025). Enhancing grid resilience through DMR trunking communication systems. World Journal of Advanced Engineering Technology and Sciences, 17(03), 197–212. https://doi.org/10.30574/wjaets.2025.17.3.1551*
122. *Nabil, S. H. (2025). Enhancing wind and solar power forecasting in smart grids using a hybrid CNN-LSTM model for improved grid stability and renewable energy integration. World Journal of Advanced Engineering Technology and Sciences, 17(03), 213–226. https://doi.org/10.30574/wjaets.2025.17.3.155*
123. *Nahar, S. (2025). Optimizing HR management in smart pharmaceutical manufacturing through IIoT and MIS integration. World Journal of Advanced Engineering Technology and Sciences, 17(03), 240–252. https://doi.org/10.30574/wjaets.2025.17.3.1554*
124. *Islam, S. (2025). IPSC-derived cardiac organoids: Modeling heart disease mechanism and advancing regenerative therapies. World Journal of Advanced Engineering Technology and Sciences, 17(03), 227–239. https://doi.org/10.30574/wjaets.2025.17.3.1553*
125. *Shoag, M. (2025). Structural load distribution and failure analysis in curtain wall systems. IJSRED - International Journal of Scientific Research and Engineering Development, 8(6), 2117–2128. Zenodo. https://doi.org/10.5281/zenodo.17926722*
126. *Hasan, E. (2025). Machine learning-based KPI forecasting for finance and operations teams. IJSRED - International Journal of Scientific Research and Engineering Development, 8(6), 2139–2149. Zenodo. https://doi.org/10.5281/zenodo.17926746*
127. *Hasan, E. (2025). SQL-driven data quality optimization in multi-source enterprise dashboards. IJSRED - International Journal of Scientific Research and Engineering Development, 8(6), 2150–2160. Zenodo. https://doi.org/10.5281/zenodo.17926758*
128. *Hasan, E. (2025). Optimizing SAP-centric financial workloads with AI-enhanced CloudOps in virtualized data centers. IJSRED - International Journal of Scientific Research and Engineering Development, 8(6), 2252–2264. Zenodo. https://doi.org/10.5281/zenodo.17926855*
129. *Karim, M. A. (2025). An IoT-enabled exoskeleton architecture for mobility rehabilitation derived from the ExoLimb methodological framework. IJSRED - International Journal of Scientific Research and Engineering Development, 8(6), 2265–2277. Zenodo. https://doi.org/10.5281/zenodo.17926861*
130. *Akter, E., Ria, S. J., Khan, M. I., & Shoag, M. D. (2025). Smart & sustainable construction governance for climate-resilient cities.*

IJSRED - International Journal of Scientific Research and Engineering Development, 8(6), 2278–2291. Zenodo. https://doi.org/10.5281/zenodo.17926875

131. *Zaman, S. U. (2025). Enhancing security in cloud-based IAM systems using real-time anomaly detection. IJSRED - International Journal of Scientific Research and Engineering Development, 8(6), 2292–2304. Zenodo. https://doi.org/10.5281/zenodo.17926883*
132. *Hossain, M. T. (2025). Data-driven optimization of apparel supply chain to reduce lead time and improve on-time delivery. World Journal of Advanced Engineering Technology and Sciences, 17(03), 263–277.https://doi.org/10.30574/wjaets.2025.17.3.1556*
133. *Rahman, F. (2025). Advanced statistical models for forecasting energy prices. Global Journal of Engineering and Technology Advances, 25(03), 168–182. https://doi.org/10.30574/gjeta.2025.25.3.0350*
134. *Karim, F. M. Z. (2025). Integrating quality management systems to strengthen U.S. export-oriented production. Global Journal of Engineering and Technology Advances, 25(03), 183–198. https://doi.org/10.30574/gjeta.2025.25.3.0351*
135. *Fazle, A. B. (2025). AI-driven predictive maintenance and process optimization in manufacturing systems using machine learning and sensor analytics. Global Journal of Engineering and Technology Advances, 25(03), 153–167. https://doi.org/10.30574/gjeta.2025.25.3.0349*
136. *Rahman, F. (2025). Data science in power system risk assessment and management. World Journal of Advanced Engineering Technology and Sciences, 17(03), 295–311. https://doi.org/10.30574/wjaets.2025.17.3.1560*
137. *Rahman, M. (2025). Predictive maintenance of electric vehicle components using IoT sensors. World Journal of Advanced Engineering Technology and Sciences, 17(03), 312–327. https://doi.org/10.30574/wjaets.2025.17.3.1557*
138. *Hossain, M. T. (2025). Cost negotiation strategies and their impact on profitability in fashion sourcing: A quantitative analysis. Global Journal of Engineering and Technology Advances, 25(03), 136–152. https://doi.org/10.30574/gjeta.2025.25.3.0348*
139. **Jasem, M. M. H.** (2025, December 19). *An AI-driven system health dashboard prototype for predictive maintenance and infrastructure resilience*. Authorea. https://doi.org/10.22541/au.176617579.97570024/v1
140. uz Zaman, M. T. (2025). Photonics-based fault detection and monitoring in energy metering systems. *IJSRED – International Journal of Scientific Research and Engineering Development*, 8(6), 2359–2371. Zenodo. https://doi.org/10.5281/zenodo.18074355
141. Shoag, M. D., Khan, M. I., Ria, S. J., & Akter, E. (2025). AI-based risk prediction and quality assurance in mega-infrastructure projects. *IJSRED – International Journal of Scientific Research and Engineering Development*, 8(6), 2324–2336. Zenodo. https://doi.org/10.5281/zenodo.18074336
142. Haque, S. (2025). The impact of automation on accounting practices. *IJSRED – International Journal of Scientific Research and Engineering Development*, 8(6), 2312–2323. Zenodo. https://doi.org/10.5281/zenodo.18074324
143. Fontenot, D., Ahmed, F., & Chy, K. S. (2024). ChatGPT: What is it? How does it work? Can it be a teaching tool for an introductory programming course in higher education? *Southwestern Business Administration Journal*, 21(1), Article 2. https://digitalscholarship.tsu.edu/sbaj/vol21/iss1/2
144. Ahmed, F., & Rahaman, A. (2025). *AI-driven predictive modeling of Bangladesh economic trends: Highlighting financial crime & fraud* (pp. 533–542). IKSAD Congress. https://www.iksadkongre.com/_files/ugd/614b1f_4195d955f81e401a9bdbf7565b2f9948.pdf
145. Rahaman, A., Siddiquee, S. F., Chowdhury, J., Ahmed, R., Abrar, S., Bhuiyan, T., & Ahmed, F. (2025). Enhancing climate resilience in Rohingya refugee camps: A comprehensive strategy for sustainable disaster preparedness. *Environment and Ecology Research*, 13(6), 755–767. https://doi.org/10.13189/eer.2025.130601
146. Chowdhury, S., et al. (2024). Students' perception of using AI tools as a research work or coursework assistant. *Middle East Research Journal of Economics and Management*, 4(6), X. https://doi.org/10.36348/merjem.2024.v04i06.00X
147. Rahaman, A., Zaman, T. S., & Ahmed, F. (2025). Digital pathways to women's empowerment: Use of Facebook, Instagram, WhatsApp, and e-commerce by women entrepreneurs in Bangladesh. In *Proceedings of the 15th International "Communication in New World" Congress* (pp. 700–709).
148. Ria, S. J., Shoag, M. D., Akter, E., & Khan, M. I. (2025). Integration of recycled and local materials in low-carbon urban structures. *World Journal of Advanced Engineering Technology and Sciences*, 17(03), 447–463. https://doi.org/10.30574/wjaets.2025.17.3.1555
149. Fahim, M. A. I., Sharan, S. M. M. I., & Farooq, H. (2025). AI-enabled cloud-IoT platform for predictive infrastructure automation. *World Journal of Advanced Engineering Technology and Sciences*, 17(03), 431–446. https://doi.org/10.30574/wjaets.2025.17.3.1574
150. Karim, F. M. Z. (2025). Strategic Human Resource Systems for Retention and Growth in Manufacturing Enterprises. In IJSRED - International Journal of Scientific Research and Engineering Development (Vol. 8, Number 6, pp. 2547–2559). Zenodo. https://doi.org/10.5281/zenodo.18074545
151. Rahman, T. (2026). Financial Risk Intelligence: Real-Time Fraud Detection and Threat Monitoring. Zenodo. https://doi.org/10.5281/zenodo.18176490
152. Rabbi, M. S. (2026). AI-Driven SCADA Grid Intelligence for Predictive Fault Detection, Cyber Health Monitoring, and Grid Reliability Enhancement. Zenodo. https://doi.org/10.5281/zenodo.18196487
153. A., Md Sazid (2026). Comparative Performance Analysis of AI-Optimized MPPT Algorithms for Grid-Connected Solar PV Systems. Zenodo. https://doi.org/10.5281/zenodo.18261309
154. Zaman, S. U., Afrin, S., Zaidi, S. K. A., & Islam, K. S. A. (2026). Resilient edge computing framework for autonomous, secure, and energy-aware systems. *World Journal of Advanced Engineering Technology and Sciences*, 18(01), 105–121. https://doi.org/10.30574/wjaets.2026.18.1.1577
155. Ali, A. (2026). The impact of packaging design on recycling efficiency in municipal systems. *World Journal of Advanced Engineering Technology and Sciences*, 18(01), 122–139. https://doi.org/10.30574/wjaets.2026.18.1.0019
156. Mim, M. A., Sharif, M. M., Rahman, F., & Nahar, S. (2026). Smart IoT infrastructure for workplace efficiency and energy savings. *World Journal of Advanced Engineering Technology and Sciences*, 18(01), 140–156. https://doi.org/10.30574/wjaets.2026.18.1.0026
157. Taimun, M. T. Y., Alam, M. S., & Fareed, S. M. (2026). Digital twin-enabled predictive maintenance for textile and mechanical systems. *World Journal of Advanced Engineering Technology and Sciences*, 18(01), 187–203. https://doi.org/10.30574/wjaets.2026.18.1.0001
158. Fazle, A. B., Taimun, M. T. Y., Fareed, S. M., & Alam, M. S. (2026). Ergonomic and automation based process redesign in industrial workstations. *Global Journal of Engineering and Technology Advances*, 26(01), 091–108. https://doi.org/10.30574/gjeta.2026.26.1.0010
159. Alam, M. S., Fareed, S. M., Fazle, A. B., & Taimun, M. T. Y. (2026). Intelligent material flow optimization using IoT sensors and RFID tracking. *Global Journal of Engineering and Technology Advances*, 26(01), 109–125. https://doi.org/10.30574/gjeta.2026.26.1.0011