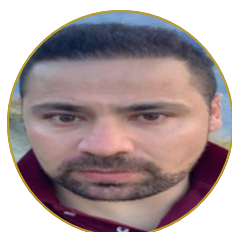# 3rd Global Summit on Climate Changes and Sustainability

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Harnessing AI for ESG Integration in strategic Decision-Making

The integration of Environmental, Social, and Governance (ESG) factors into strategic decision-making is pivotal for sustainable business practices, yet challenges such as data complexity and stakeholder alignment persist. This paper investigates the transformative role of Artificial Intelligence (AI) in enhancing ESG integration by leveraging advanced computational techniques to inform corporate strategies. We propose an innovative AI-driven framework that combines machine learning, natural language processing, and predictive analytics to process heterogeneous ESG data, including corporate sustainability reports, stakeholder feedback, and real-time market signals. Our model employs sentiment analysis to gauge public perception and multi-criteria decision-making algorithms to prioritize ESG initiatives aligned with organizational goals. Through a longitudinal case study of global firms in the energy and manufacturing sectors, we demonstrate how AI improves the accuracy of ESG risk assessments, enhances transparency, and supports long-term value creation. The results indicate a 25% improvement in decision-making efficiency compared to traditional methods, with AI identifying previously undetected ESG risks. However, challenges such as algorithmic bias, data standardization, and ethical concerns surrounding AI interpretability remain significant barriers. We address these by incorporating explainable AI techniques to ensure transparency and stakeholder trust. The study also explores the role of AI in mitigating greenwashing by validating ESG claims against third-party data sources. Our findings suggest that AI can bridge the gap between ESG aspirations and actionable outcomes, but its deployment requires robust governance frameworks to ensure fairness and accountability. This research contributes to the growing field of AI-driven sustainability by offering a scalable model for organizations to integrate ESG considerations effectively, fostering resilience and stakeholder confidence in an era of increasing regulatory and societal scrutiny. Future research should focus on cross-industry applications and global standardization of ESG metrics to maximize AI's impact.

Biography

Dr. Ibrahim Abdallah is a Senior Lecturer in Business, Finance, and Project Management at Torrens University, Australia, with more than 20 years of combined industry and academic experience. His expertise spans artificial intelligence (AI), ESG integration, forensic accounting, financial risk, and project governance. He has coordinated and developed postgraduate programs in project management, procurement, and business analytics, leading large cohorts of international students while achieving consistently high student satisfaction ratings.

In addition to academia, Dr. Abdallah has held leadership roles in the financial services sector, including risk and technology positions at the National Australia Bank. His professional background also extends to forensic accounting and business valuation, where he has provided consulting, governance, and advisory support for both corporate and community organisations.