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1

Evolving Technologies and Smart Shipping Affecting Future Maritime Industry Workforce

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Abstract

The maritime sector is facing a revolution that consists of smart ships' capabilities with the help of IoT and AI. This research is focused on the effects of these technologies on the future maritime workforce. The aim of the study will be accomplished by studying how fast technological development is changing maritime professionals. This will reveal the challenges and opportunities that accompany smart shipping. The study is based on PRISMA guidelines with an in-depth systematic review conducted through the best available literature on the topic, including scientific journals, industry reports, and white papers. They also study IoT & AI case smart-ships to give people an idea of the functioning of these technologies for maritime operations. The study shows a variety of technical environments involving blockchain, AI, IoT, autonomous boats, and sustainable technology. The case study models the technological efficacy of integration of IoT and AI in operations, as well as the workforce challenge of adapting. The report states the consequences for the future shipping industry and how, for example, the structure of work change and the challenges it entails must be addressed by the concerned parties. However, innovation in the shipping industry, which is technology-intensive, can also increase the use of robots and ships being controlled remotely, which could mean there are fewer jobs for seafarers. This is why it is important to take proactive measures in this area. The research wraps up by formulating suggestions for policymakers, industry representatives, and researchers for dealing with the rapidly growing technological world in the maritime sector.

Keywords: evolving technologies, maritime technology, Smart Shipping, IoT, AI, blockchain, autonomous vessels, sustainability in shipping, future workforce impact