

## Artificial Intelligence in Maritime Security: Enhancing Future Strategic Stability in the Indian Ocean Region

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The Indian Ocean Region (IOR) is significantly important, and it plays a pivotal role in the global maritime trade networks and energy corridor; therefore, its security is paramount. Now it is facing the latest challenges and requires new strategies for its sustenance. This paper aims to examine the evolution of artificial intelligence (AI) and its application to enhance regional maritime security in the IOR, with an understanding of how AI could contribute to the improvement of maritime security to guarantee future strategic stability within the IOR. This study defines significant domains that are encouraging for the application of AI and incorporated in maritime operations surveillance, threat recognition, decision-making, and even the autonomy of systems. The paper is qualitative and provides a critical examination of the present context of the geopolitical and security risks of the seas. The study demonstrates how AI implementation impacts regional collaboration and the resolution of conflicts, with an emphasis on ethical issues and complying with international legal frameworks where necessary. Moreover, it responds to the threats and prospects of AI, technological firepower, and the rising challenges of capacity-making among the IOR states. The paper illustrates how the incorporation of AI is anticipated to change maritime security for the better and advance the stability of the Indian Ocean region through studying several academic publications and case studies. There is strong evidence that indicates the use of AI technologies requires strategic investment while multilateral cooperation is equally important in improving security for the IOR states.

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