

# AI for Climate Action: Using Artificial Intelligence to Combat Climate Change Challenges

Harendra Kumar<sup>1</sup> and Dr. Dipak Dnyandeo Jadhao<sup>2</sup>

<sup>1</sup>Research Scholar, Department of Computer Science and Engineering

<sup>2</sup>Assistant Professor, Department of Computer Science and Engineering  
Sunrise University, Alwar, Rajasthan

**Abstract:** *With an emphasis on its uses in climate modeling, renewable energy optimization, and catastrophe response, this in-depth study examines the revolutionary role of artificial intelligence in tackling the global climate issue. We investigate how AI technologies are transforming the accuracy of climate predictions, improving data processing skills, and allowing complex climate scenario simulations via a thorough literature analysis, case studies, and expert interviews. The essay explores AI's contributions to energy storage optimization, smart grid management, and renewable energy forecasting, emphasizing how it might hasten the shift to sustainable energy systems. We also look at AI-driven methods for resilience and disaster response, such as post-disaster recovery planning, resource allocation during climate-related disasters, and early warning systems. This paper acknowledges the tremendous progress AI makes in addressing climate change, but it also discusses its drawbacks and restrictions, including problems with data quality, moral dilemmas, and technological obstacles. We talk about new AI developments, how they work with other solutions, and the policy ramifications for successful climate change adaptation and mitigation.*

**Keywords:** AI for Climate Action, Climate Change Mitigation, AI-driven Sustainability