

# Application of Artificial Intelligence in the Aero Turbine Maintenance

Mr. Akshay V. Gade<sup>1</sup>, Mr. Nikhil R. Bayas<sup>2</sup>, Mr. Farhan Siddique<sup>3</sup>, Ms. Chaitanya Gedam<sup>4</sup>  
<sup>1234</sup>Department of Mechanical Engineering

Jawaharlal Darda Institute of Engineering and Technology, Yavatmal, India

**Abstract:** *In the realm of aerospace engineering, the application of artificial intelligence (AI) has ushered in a paradigm shift in the maintenance strategies employed for aero turbines. This paper presents a comprehensive overview of the manifold ways AI is transforming the maintenance landscape, encompassing predictive maintenance, condition monitoring, fault diagnosis, optimized scheduling, autonomous inspection, cognitive assistants, and data analytics. By harnessing the power of AI, organizations operating within industries reliant on aero turbines stand to gain significantly in terms of efficiency enhancement, downtime reduction, and the assurance of turbine reliability. Through a detailed exploration of each AI application, this paper illuminates the transformative potential that AI holds for aero turbine maintenance, paving the way for a new era of operational excellence and cost-effectiveness in the aerospace sector.*

**Keywords:** aerospace engineering