

Flight Scheduling Optimization using AI

Mr. Alvin John M. Paz

National Aviation Academy of the Philippines

alvinmpaz.27@gmail.com



Alvin John M. Paz, DIT is the Dean of the Institute of Computer Studies (ICS) at the National Aviation Academy of the Philippines (NAAP), formerly the Philippine State College of Aeronautics (PhilSCA). He earned his Doctor of Information Technology (DIT) degree from La Consolacion University, Philippines. He is actively engaged in academic leadership, research, curriculum development, and student mentorship in Information Systems, Information Technology, and Computer Science. His research interests include Learning Management Systems, Technology Acceptance Models, Artificial Intelligence applications in education and governance, Virtual Reality-based aviation training, and information systems development. He is actively involved in institutional quality assurance, capstone project supervision, and academic initiatives that promote innovation, digital transformation, and excellence in higher education.

Air Traffic Optimization using AI

AI algorithms are also being used to optimize air traffic management. As the number of flights continues to rise, airspaces around the world are becoming more congested. Air traffic optimization using AI involves using machine learning and artificial intelligence to analyze air traffic patterns and provide predictive insights and decision support to air traffic controllers. These optimizations can help aircraft spend less time in the air and reduce fuel burn and greenhouse gas emissions.

Benefits of AI-Powered Flight Scheduling and Air Traffic Optimization

Efficiently managed airspace can help reduce delays, cut fuel burn, and improve operational resiliency. AI-powered flight scheduling and traffic management can help the aviation industry work towards its sustainability goals. Other benefits include:

Fewer delays: When flight schedules and air traffic are optimized with artificial intelligence, flights arrive and depart on time more often. Predictive maintenance and operations risk analytics also help prevent flight disruptions before they occur.

Less fuel burn and emissions: Flight scheduling and traffic management optimizations can help cut fuel burn and GHG emissions by reducing time spent in the air and on the ground, minimizing unnecessary holding patterns, and more.

Increased resiliency: When unexpected events, such as weather or operational disruptions, occur, AI can help airlines and airports respond faster and more efficiently.

Flight scheduling and traffic management are just two examples of how AI is being used to optimize the aviation industry. As airlines and airports continue their digital transformations, AI will play an even more critical role in helping the industry meet future demands.