

### How the 4 Largest Airlines Use Artificial Intelligence

- 1) As of the time of the writing of this article, late 2019, the industry leaders amongst the airlines were using AI in three primary ways: as AI assistants that respond to customer inquiries using natural language, via voice. That accounts for American Airlines and United. Southwest was using machine learning to help automate operations. Delta had facial recognition technology to help to match passengers to their luggage at kiosks.
- 2) As of the article, the airlines were still experimenting with technologies, but there were some tangible results. American Airlines held a “HackWars” that produced a luggage sizing and payment app that they wanted to protect. Delta premiered four kiosks with facial recognition technology at the Minneapolis-St. Paul airport, which was used to verify customer identity. They said it improved customer service and operational effectiveness. Southwest’s use of machine learning (such as time-series analysis and pattern recognition) enabled them to identify potential flight glitches and relay them to air traffic control, avoiding at least one potential incident. United perhaps had the most complex solution implemented, a collaboration with Amazon Alexa called “United Skill” that allowed users to find answers to the most common questions about United flights by using natural language. This aimed to improve customer satisfaction. People were able to check flight times, and even check in via Alexa. Reception was mixed, because United Skill would make errors, Only time will tell if the app would produce benefits.
- 3) Airline AI applications were trending in the area of self-service kiosks and apps to check-in. Machine learning algorithms continued to gain traction, leading to efficiency and safety improvements.

In more recent days, recent trends in AI adoption and innovation in the airline industry focus on improving efficiency, safety, and passenger experience. Airlines are increasingly leveraging AI for dynamic pricing and revenue management, allowing fares to adjust in real-time based on factors like market demand, customer profiles, and external conditions, which helps optimize revenue. AI is also making strides in flight delay prediction by analyzing vast amounts of real-time data, including weather and airport conditions, enabling airlines to mitigate disruptions and enhance scheduling.

AI-powered biometric systems are revolutionizing airport security, offering seamless, touchless check-ins and boarding experiences, which passengers

increasingly prefer. Additionally, AI-driven personalization is transforming customer service, as airlines now use AI to tailor in-flight experiences, from seating to entertainment, based on individual preferences. Meanwhile, autonomous technologies are being explored for cargo delivery and long-term plans for AI-piloted flights, signaling a future where operational efficiency could see further significant gains.

AI also plays a key role in predictive maintenance, enabling airlines to anticipate technical issues and reduce downtime, thus ensuring smoother operations and lower costs. This trend of AI innovation is expected to expand, particularly as the industry continues to explore autonomous systems for ground handling and aircraft inspections, enhancing safety and operational precision.