How AI is reshaping the future of aviation

By Kirby Gordon

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The image is a familiar one, straight out of a Hollywood script: an aeroplane in distress, a heroic figure battling through the cockpit door, only to find no human pilot at the helm. It's a scene that once seemed purely fictional, but with today's advancements in artificial intelligence (AI), the question arises: how close are we to AI-piloted flights?

Source: ©JaromÃr Chalabala via 123RF

Dual impact of AI in aviation

While autopilot systems have been trusted companions in aviation for years, the dawn of fully autonomous, AI-piloted aircraft still lies beyond the horizon. However, the progress in AI technology is undeniably reshaping the aviation landscape. Not unlike many other industries, there are two spaces where AI's transformative effects are most clear.

Firstly, AI can execute routine tasks, ones that traditionally require human oversight, with an impressive level of autonomy, freeing people up to tackle more challenging tasks. Secondly, AI's prowess in analysing vast amounts of data is unparalleled. More impressive is its capacity to mine data for insights, enabling more informed and strategic decision-making.

But, the technological leap is not heralding a new industrial revolution. Rather it is refining the current one, enhancing efficiency and service quality in aviation. For instance, airlines including FlySafair, KLM, and United are harnessing AI for customer service, rapidly providing accurate responses to inquiries across various digital platforms.

AI at the frontline of customer service

Changi Airport in Singapore's recent incorporation of AI technology also exemplifies the potential use of technology. Their integration of AI during check-in and boarding processes has eliminated the need for human intervention. This means human employees are freed to tackle more cognitively demanding tasks or complex processes. A big sore point in the AI conversation, especially in SA is how AI is going to take people's jobs. We must balance the conversation by including

some points on job creation.

The excitement continues beyond customer interaction. AI's data interpretation skills are revolutionising preventative maintenance. Flight data is recorded and interpreted by airlines for every flight, offering a wealth of detailed information on the intersection between aircraft performance and operating conditions.

Optimising costs and safety with AI analytics

The premise of preventative maintenance is to utilise this data so that maintenance issues can be identified before they arise and, thus, proactively addressed before they result in a flight delay. The historical challenge is that the data set is vast.

While the professionals working in this area have made incredible strides, it is very challenging to keep an informed overview of so much input. This is where AI-driven technology shines, scouring over this data in fractions of the time, with a degree of thoroughness not known before, to spot trends and surface the insights that may have previously been overlooked.

Another area in which this capability will have a remarkable impact is cost optimisation regarding schedule efficiency and fuel burn dynamics. Currently, airlines are required to build intricate models that analyse vast quantities of data to perform this kind of complex analysis.

The insight advantage and data crunching capacity of generative AI will play a fundamental role in optimising airline operations into the future, reducing costs and emissions. This will not only be good for consumers and the environment, but it will also be excellent for safety thanks to additional insights into prudent planning.

While the reality of Robopilot may still be some while off, the impact of AI on modern aviation is already being felt. The aviation industry has only scraped the surface of the potential advantages that AI could provide to airlines and the improvements that it could offer in both their operations and customer service.

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