

Drone data at the edge: three steps to better AI insights

Words by Jimmy Tam, CEO, Peer Software.

Data from drones can be hugely valuable. From surveying land to inspecting infrastructure, using drones offers greater accuracy and quicker access to insights than traditional methods. But it also generates a vast quantity of data and, of course, that presents challenges. Beyond the obvious storage capacity needed, wading through terabytes of information can mean some architects are missing out when it comes to getting the most from their drone data.



Enter AI. Offered up as a solution to unlock the power of data, AI has capabilities that could help architects, and other sectors that handle large volumes of data, to access insights and improve business outcomes. Algorithms to process and analyse drone data in real-time, for example, promise to speed up decision-making. Machine-learning algorithms have the capacity to identify patterns, anomalies and trends, and automating repetitive tasks like image recognition, feature extraction and classification can limit user error and free up time to focus on the jobs AI cannot do.

Without the right infrastructure in place, though, AI could fall short of the high expectations we all have for it. And all that valuable drone data could be left to languish in storage.

If AI solutions struggle to access data stored in edge locations, or if they access out of date information, the resulting insights will be inaccurate at best. At worst, the information produced could mean firms fall foul of regulations or are left open to legal challenge.

It all stems from how AI accesses information; we must make sure AI is analysing and learning from the right data. That means stepping back and looking at the way we store data in the first place. If files are stored in silos, locally with no global access, or if there are multiple versions, AI has to work so much harder, and that makes it more difficult to trust its insights.

The good news is that there are simple ways you can provide your AI tools with the right access to drone data, or any other data for that matter. To get started, I usually suggest the following three steps for the most targeted impact.

1. Provide instant access to data

If someone gave you out-of-date information and asked you to make a critical business decision, you would be worried. The same goes for AI. With real-time access to data, AI algorithms can analyse data streams as they are generated, provide immediate insights on emerging trends, and respond to changing circumstances or unusual patterns. By making sure AI has access to the most recent drone data, your plans and ideas will be based on what is happening right now, rather than an old snapshot from months ago.

2. Think always-on

Imagine, you are putting together a project proposal. You are relying on AI insight into a land survey carried out by one of your drones, but at a crucial moment an outage stops everything in its tracks.

AI algorithms rely on a constant stream of data to learn, adapt and make informed decisions in real-time. If access to data is interrupted, whether that is through connectivity issues, downtime or datacentre failure, it could dramatically impact results. So prioritise continuous availability to your data and ensure AI solutions can access critical files and data at any time, regardless of network disruptions.

3. Prioritise version control

AI using outdated data is likely to generate inaccurate assessments of site progress, for instance miscalculating building dimensions or overlooking recent structural changes. Project managers taking decisions with these flawed insights could go on to allocate the wrong resources or make design modifications that simply will not work.

So if data is stored across different systems and locations, look for ways to automate file updates so that changes are reflected immediately wherever they are stored. And think about how you will track changes, manage revisions and maintain a clear audit trail of data modifications, so that your AI model can readily identify the most recent version.

AI offers so much potential, especially when it comes to handling large data sets like those we see produced by drones. Opening up AI's access to accurate, up-to-date information will help to unlock your data's true value. Without that access, the technology's results will be limited and it will be impossible for us to realise its true potential. ■