I'LL BE BACK!

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We've all seen the *The Terminator* movie, right? Man builds machine; man puts too much faith in machine; machine inevitably turns on its master and goes on the rampage. We all know how it ends, but **Neil Pollock** isn't convinced and explores an alternative storyline

Of course, we're not in 1984 anymore and Artificial intelligence (AI) is no longer the preserve of Hollywood science fiction. Far from it. Today, AI is very much with us in our daily lives and it's changing and shaping our world (think Alexa). It's important to remember that AI actually includes many sub-disciplines including Machine Learning and Automation. In this month's column, I want to explore how, for better or worse, AI is affecting the geospatial world. I will also ask what effects it will have on all of us in the near and distant future.

Geospatial projects are inherently complex, with lots of moving parts. While there needs to be a focus on successful execution of plans by the surveyor, groundworker, site engineer etc, the reality is that project success is firmly rooted in quality upfront planning. This is an area where AI can make an enormous difference. Imagine a tool that remembers the successes and failures of every single job on which you had worked and use that data to inform future plans. You're imagining AI that already exists ... and it's already saving time, money and lives!

Risky business

AI can help mitigate risks throughout a project lifecycle. Those risks arise from a variety of factors - financial, time-based, quality-based, etc. But for geospatial professionals like you and I, personal safety is a top priority - so how is AI helping in this area?

AI is helping to fly our drones on construction sites. In fact, between 2017 and 2018, the number of drones deployed to construction sites grew by over 200%*, with one survey reporting that more than 50% of such sites employing drones enjoyed improved safety. Some contractors are employing smart video cameras that take a snap of each worker entering a site to make sure the correct PPE requirements are being adhered to. We need to be clear that worker safety is everybody's responsibility, but if AI can help, then that is a universally useful thing.

But what if we didn't need to enter a

Safety concerns loom large on busy construction sites. AI and robotics could well perform tasks that could otherwise entail risk.

The number of drones deployed to construction sites grew by 200% plus between 2017 and 2018. Photo: Heliguy

dangerous site at all and could ask 'robots' using AI to navigate it for us and capture the required data? Scanner manufacturers have teamed up with Boston Dynamics to do just that, allowing for fast, and more importantly, safe data collection (see lead picture on preceding page of robot with the new Trimble X7 3D Laser Scanner on its back). This technology can no doubt be utilised to carry a myriad of payloads to assist the geospatial professional.

As well site surveying, drones are already being used to speed otherwise time-consuming tasks. Here, Civdrone's robotic system inserts 'smart' pegs into the ground that subsequently provide data to construction teams via a smartphone app. Photo: Civdrone

Plugging the gap

In a further bid to improve site safety, AI is being used to assist with off-site construction too. In the UK there is a requirement for three million more homes before 2020 to alleviate the housing crisis. If AI can assist in the producing affordable and often standardised homes, then surely that's a good thing. I have spoken in my previous column about shortages of labour. Can AI help to plug the gap? I think it can.

So where do we go from here? Is there an inevitable onward march towards automation? I don't think so. AI is generally defined as being "the ability of computer systems to perform tasks normally requiring intelligent human intervention". Well you're reading this column so intelligence is a given! But imagine if that intelligence could be used elsewhere in a project while AI equips us with the data we need to work faster, smarter, more efficiently and, above all, safer. I for one welcome this AI revolution with open arms and let's be honest, who wouldn't want to take a robot dog to work!

https://blog.dronedeploy.com/the-rise-of-drones-in-construction-5357b69942fa