



Michael Lee
Founder of the Institute
of Futurology

Automation of the skies: The future of artificial intelligence in aviation

The skies are going to be increasingly populated by drones as our national airspace is opened up by the end of September 2015 to commercial use of unmanned aerial vehicles (UAVs).

Meanwhile, the artificial intelligence revolution is transforming the whole job market. A recent Oxford University study anticipates that 45% of all jobs may be vulnerable to automation.

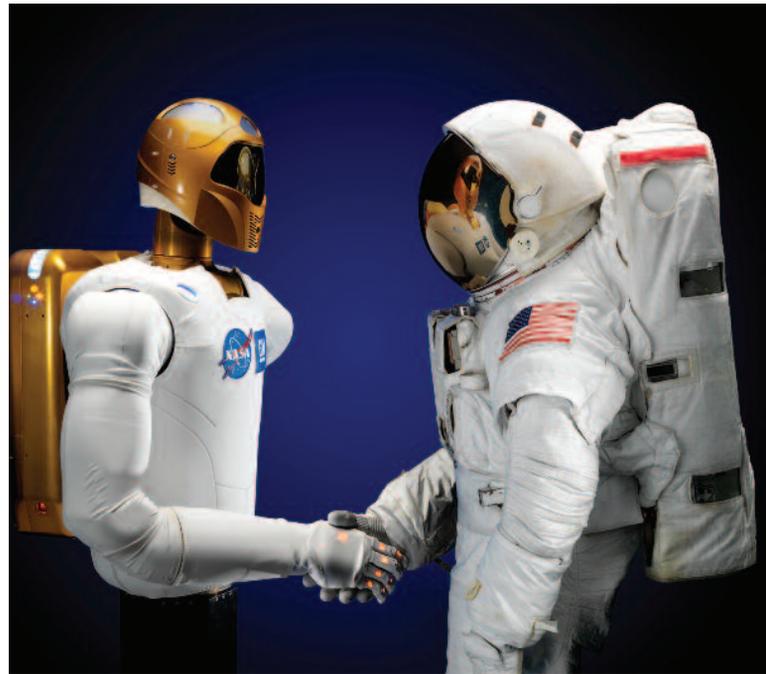
“One day, seeing Amazon Prime Air will be as normal as seeing mail trucks on the road today, resulting in enormous benefits for consumers across the nation,” claims Amazon VP Paul Misener.

Is artificial intelligence coming to a job near you? This question boils down to: What can you do that a machine can't do better? It's true that artificial intelligence is superior to humans at some functions and tasks. The Russians sent Yuri Gagarin into space as the world's first space-man in 1961 on an automated rocket and spaceship system called Vostok 1. And robots have reached Mars long before humans can do so. Yet it's equally true that there are unique aspects of the human mind and character which cannot be replicated in computer code.

There'll be worldwide competition between artificial and human intelligence in the coming decades, even for more sophisticated roles performed by the likes of attorneys, teachers and stockbrokers. We'll need to step up our mental, physical, social and technological abilities, showing where we can enhance efficiencies and add value on the human and social levels.

These days we board planes after automatic online and kiosk check-ins but I can't see masses of passengers wanting to fly commercially without human pilots having ultimate manual control of the plane. One cannot automate social trust. And other human qualities, like intuition, empathy, creativity, some forms of inductive and deductive logic, common-sense, spirituality, and leadership cannot be automated. It's the holistic nature of human decision-making that robots cannot match. These machines won't make very good detectives, bodyguards, emergency services personnel or leaders. And I don't think we're going to see innovation being automated anytime soon. So the onus on us will be to add human value, leadership or innovation in our jobs.

When Amazon bought the Kiva Systems robotics company for \$775 million in 2012, it was an industrial game changer. The organization's worker efficiency is reported to have increased by as much as 400%. Thousands more units are going to be deployed, displacing warehouse workers. The US launched the Advanced Manufacturing Partnership plan in 2011, investing \$2.2 billion to develop industrial robots and advanced materials. The EU's Horizon 2020 program will spend \$1 billion to develop “life companion” robots to be nursemaids to assist its aging population. South Korea plans to ramp up its economy by spending \$2.5 billion on advanced robots.



R2 shaking hands with astronaut. Robonaut 2 (R2) is a dexterous, humanoid astronaut helper. R2's torso, head and arms are now aboard the International Space Station. Upgrades, such as the robot's new high-tech legs, will extend its use both inside and ultimately outside the orbiting complex.

And Japan aims to revive its flagging economy with a robot revolution including a Japanese-sponsored Robot Olympics to be held in conjunction with the 2020 Tokyo Olympic Games.

The key to winning this intelligence race is to realize that human and machine intelligence are not different degrees of the same phenomenon but are different in kind. The focus must be on developing human qualities that cannot be replicated by a system. This is especially true in demanding, fast-moving, exceptional physical conditions. As Yuri Gagarin, the world's 1st person to fly in Space, wrote in *Road to the Stars*: “...man will always have to make decisions no matter how perfect the machine and that in critical cases man is more versatile... the human brain is nature's most perfect work, there is nothing to replace it and never will be.”