

## Russian spacecraft carrying robot fails to dock with space station



ROSCOSMOS

A Russian Soyuz spacecraft carrying a humanoid robot failed to dock with the International Space Station (ISS) on Saturday, Russian news agencies reported, citing a live broadcast.

The Fedor (Final Experimental Demonstration Object Research) robot is on its way to the ISS on a planned two-week mission to support the crew and test its skills, Reuters reported.

The docking process, originally planned for 0530 GMT, failed due to issues related to the automatic docking system, Interfax news agency added, citing NASA TV as saying.

The spacecraft is currently 96 meters away from the station and officials plan to attempt docking again on Monday morning, RIA reported, citing Russia's flight control center.

The Skybot F-850 is the first humanoid robot sent to space by Russia. NASA sent humanoid robot Robonaut 2 to space in 2011 to work in hazardous environments.

Fedor is the size of a human adult and can emulate movements of the human body.

The ISS is a joint project of the space agencies of the United States, Russia, Europe, Japan and Canada.

## Prehistoric plant could reproduce in UK for first time in human history



VENTNOR BOTANIC GARDEN

Palm tree-like Cycads are flowering and could possibly reproduce in the UK for the first time in human history — and experts think that climate change could be the cause.

While Cycads (or more specifically *Cycas revoluta*) flower in several parts of the world, they only bloom like this in very warm climates. Not, usually, in the Ventnor Botanic Garden on the Isle of Wight, off the south coast of England, sciencelert.com reported.

Now cones from both male and female Cycads have appeared, something which has never been recorded as happening before in the UK human history, and that gives local botanists the chance for another first: To transfer pollen between them.

"Interestingly, back in time Cycads lived in the area that was to become the Isle of Wight, fossil Cycads have been found in the cliffs along the West Wight coast," wrote Liz Walker from the botanic garden in a news update on the site.

"Therefore Cycads have been on holiday away from the area for 120 million years."

"This can be seen as further evidence from the plant kingdom of climate change in action," she added.

"Certainly this sort of plant could formerly not be considered hardy in the UK; the recent heatwave has contributed to the individual cone growth."

Experts think Cycads have been absent from northwest Europe for around 60 million years, which gives you an idea of what an extraordinary event this is — and which demonstrates how temperatures are shifting across the globe.

July 2019 saw the highest temperature ever recorded in the UK — 38.7 degrees Celsius or 101.7 degrees Fahrenheit — and we know that many other parts of the world are consistently getting warmer too.

"Conditions must be improving or triggering for us to get a male and a female at the same time," John Curtis, the director of the Ventnor Botanic Garden, told Yessenia Funes at Earther.

"For us, it's just a symptom of the changing climate. It's the plants talking to us and responding to these favorable conditions."

The Isle of Wight is one of the mildest parts of the UK, and botanic garden staff say the lowest January temperatures are now averaging above what the highest January temperatures were 100 years ago.

That's a shift that's allowing a different type of plant to survive the winter. Speaking to Patrick Barkham at the Guardian, Ventnor Botanic Garden curator Chris Kidd said he thinks the site is a "predictor" for what Britain will be like in 20-30 years.

While the discovery is an exciting one for Britain's botanists, it shouldn't take away from the very real dangers that our climate emergency threatens: Ultimately a genuine threat to human civilization, according to some experts.

We can't say the plants didn't try to warn us.

# Tech firms must give up their awkward secret: Humans

By Dave Lee\*

Among the thousands upon thousands of words that make up the privacy policies of the tech giants, one you rarely find is "human."

Zero uses of the word in Amazon's privacy policy for its Alexa voice assistant. The same goes for Apple's Siri. And Google's Assistant.

Facebook's policy uses the word just once — to inform you that it will record data about your device to make sure that you are human.

Only Microsoft states what all of these other privacy policies arguably should, "Our processing of personal data ... includes both automated and manual (human) methods of processing."

I point this out because the issue of human labor is a touchy subject in Silicon Valley right now; a fresh atmosphere of controversy for which companies only have themselves to blame.

First, Amazon was revealed to have been using human contractors to listen to clips picked up by Alexa. Then it was discovered Google was doing much the same, as were Apple. All three companies said they would halt the practice in response to the negative publicity.

And then Facebook, it was reported by Bloomberg last week, was using humans to listen to recordings gathered via its Messenger app. The company insisted proper consent had been obtained, but subsequent reporting found that wasn't quite accurate. Well, it wasn't at all accurate. Facebook didn't say a word about it to users.

### Final fallback

The stories have dropped like dominoes. Any voice-powered or "automated" system is now quite rightly being put under scrutiny. Do Microsoft contractors sometimes listen to audio captured via Skype? Yep. Do they listen to audio of gamers speaking through their Xbox? Sure do.

For reporters, the low-hanging fruit is everywhere you look. I picked an "automated" service I use often — Expensify, the expenses-logging app



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that can "smartscan" receipts — and looked into it. Did humans have any role in how it worked? Yes, it turns out they do.

"SmartScan is a complex, multi-layered system that takes multiple approaches to extracting information from receipts," the company told me.

"The final, fallback approach is that it is sent to one of our contractors. When we're unable to extract the required information from the receipt, the receipt is reviewed by one of our contractors to fill in the missing information."

No mentions of humans in Expensify's privacy policy, either.

### 'We could add a comma'

There is a reasonable explanation for all this — if only the egotistical, secrecy-obsessed tech giants could bring themselves to say it. Without humans, most of these products would suck.

Expensify, to its credit, admitted to

me that without human review, it would likely only manage about 80-85 percent accuracy. It would mean users would need to check all of their receipts for errors, defeating the point of using the software entirely. So, on balance, if a contractor has to step in once in a while — that's fair. Not mentioning it anywhere on their website? Considerably less so.

Amazon, Google, Apple, Facebook and Microsoft all face the same challenge. Those companies capture these recordings not to spy on you, but to figure out when and why their technologies, still early in their development, get things wrong.

But what's most frustrating to me, is that I don't think most people have a problem with that. I know I don't: My expectation is that because these products aren't perfect, firms need to work on improving them. It's almost reassuring that humans are still so relied upon.

But my other expectation is for tech companies to be up front about it, and on that, most have failed. I interviewed Amazon's head of Alexa earlier this year and asked him if he felt Amazon could do more to make it clear in their privacy policy that humans had even just a minor role in Alexa's systems.

"I suppose we could add a comma after that and be more specific," he told me (spoiler: They haven't done that).

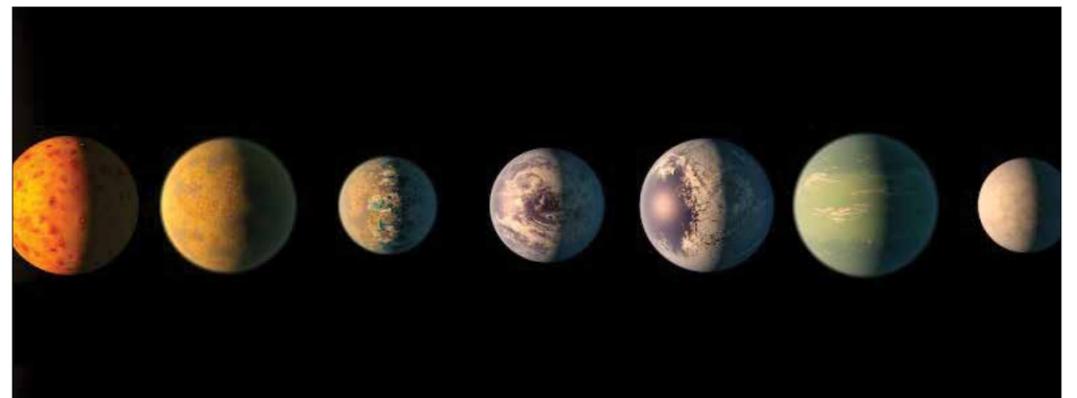
Put it on the damn box, I say. Be honest.

The tech industry needs to quickly understand that the tech-buying public will forgive them for using human labor, far more readily than it will for blatant and lazy abuses of trust.

But then, doing so would mean admitting an imperfection, weakness or inefficiency. And that's just not the done thing around here.

\* Dave Lee is the North America technology reporter for the BBC.

## Exoplanets could have better conditions for life than Earth, study says



NASA

Earth seems like the perfect hub for life because it's the only planet known so far to host it — but new research suggests that other planets could have oceans that are even more hospitable, offering life that is more varied than we know it.

Researchers used NASA-developed software called ROCKE-3D to simulate ocean circulation and climates on different types of exoplanets, or planets outside our Solar System, CNN reported.

Oceanic life on Earth depends on an upward flow, or upwelling, which moves nutrients from the dark depths to sunlit portions where photosynthetic life thrives. More upwelling means more nutrient resupply, which means more biological activity, researchers say.

So, a research team used the software to identify "which (types of) planets will have the most efficient upwelling and thus offer particularly hospitable oceans," Stephanie Olson, lead researcher at the University of Chicago, said while presenting the research at the Goldschmidt Geochemistry Conference in Barcelona.

"We found that higher atmospheric density, slower rotation rates, and the presence of continents all yield higher upwelling rates," Olson said.

"A further implication is that Earth might not be optimally habitable — and life elsewhere may enjoy a planet that is even more hospitable than our own."

"This is a surprising conclusion," Olson said. "It shows us that conditions on some exoplanets with favorable ocean circulation patterns could be better suited to support life that is more abundant or

more active than life on Earth."

NASA has said that the best chance for finding life elsewhere in our own Solar System could be on ocean worlds like Jupiter's moon Europa and Saturn's moon Enceladus. But the search for life has largely involved seeking out exoplanets within the habitable zone of the stars they orbit, existing at just the right distance for a surface temperature that can support liquid water on the surface.

"NASA's search for life in the universe is focused on so-called habitable zone planets, which are worlds that have the potential for liquid water oceans. But not all oceans are equally hospitable — and some oceans will be better places to live than others due to their global circulation patterns," Olson said.

"These are the conditions we need to look for on exoplanets."

Investigating exoplanets has to happen from afar because with current technology, we can't reach them. Telescopes can help determine what the conditions might be like on exoplanets, but that data also has to be applied to models of potential climates and evolution that takes place on planets different from our own. Combined, data and models can inform scientists of which planets could host life.

Current telescopes can't identify exoplanets to test Olson's theory, but ideally this finding could help in developing future telescopes that could seek out types of exoplanets defined in this research.

"There will always be limitations to our technology, so life is almost certainly more common than 'detectable' life," Olson said.

"This means that in our search for

life in the universe, we should target the subset of habitable planets that will be most favorable to large, globally active biospheres because those are the planets where life will be easiest to detect — and where non-detections will be most meaningful."

This finding continues the interesting work being done around ocean worlds.

"We expect oceans to be important in regulating some of the most compelling remotely detectable signs of life on habitable worlds, but our understanding of oceans beyond our Solar System is currently very rudimentary," said Chris Reinhard, a Georgia Institute of Technology professor who was not involved in the study.

"Dr. Olson's work represents a significant and exciting step forward in our understanding of exoplanet oceanography."