

# That's amazing!

Enjoy our special selection of the best Christmas science stories

## Robot writes Christmas carols

*Jingle Bells* and *Silent Night* are classic Christmas songs written by humans, but could a robot do better? Scientist Janelle Shane decided to find out.

In 2017, Janelle Shane trained an artificially intelligent (AI) computer to write Christmas carols, and the results were very interesting.

AI is the name given to a computer system that is able to “think” for itself and perform tasks that usually require human intelligence. These include problem solving, decision making, learning and reasoning.

First, Shane trained the computer to imitate carols. To give it an idea of what was required, she gave it 240 ancient and modern Christmas songs that were written by humans, and a tool called an artificial neural network (a computer system modelled on the human brain), which the computer used to learn how to write songs. The AI then practised writing

its own carols over and over again, learning from its mistakes.

As you can imagine, the first attempt was gibberish: “A a a na snn aca naa i s a i aa a a n a uugna nn na ia uaa aa i aa aa a sna aagt o aa.” Neural nets train themselves and soon – by comparing its nonsense output against the real songs – the computer started to get the basic structure right and create words. The songs still didn’t make much sense, “The holly bears a berry, And all the reindeer of the sky.” Read the AI’s final effort on the page opposite.

“Neural networks tend to pick up tone and vocabulary pretty easily, but struggle with making sense,” said Dr Shane to *The Times*. Well, at least the carols were joyful.

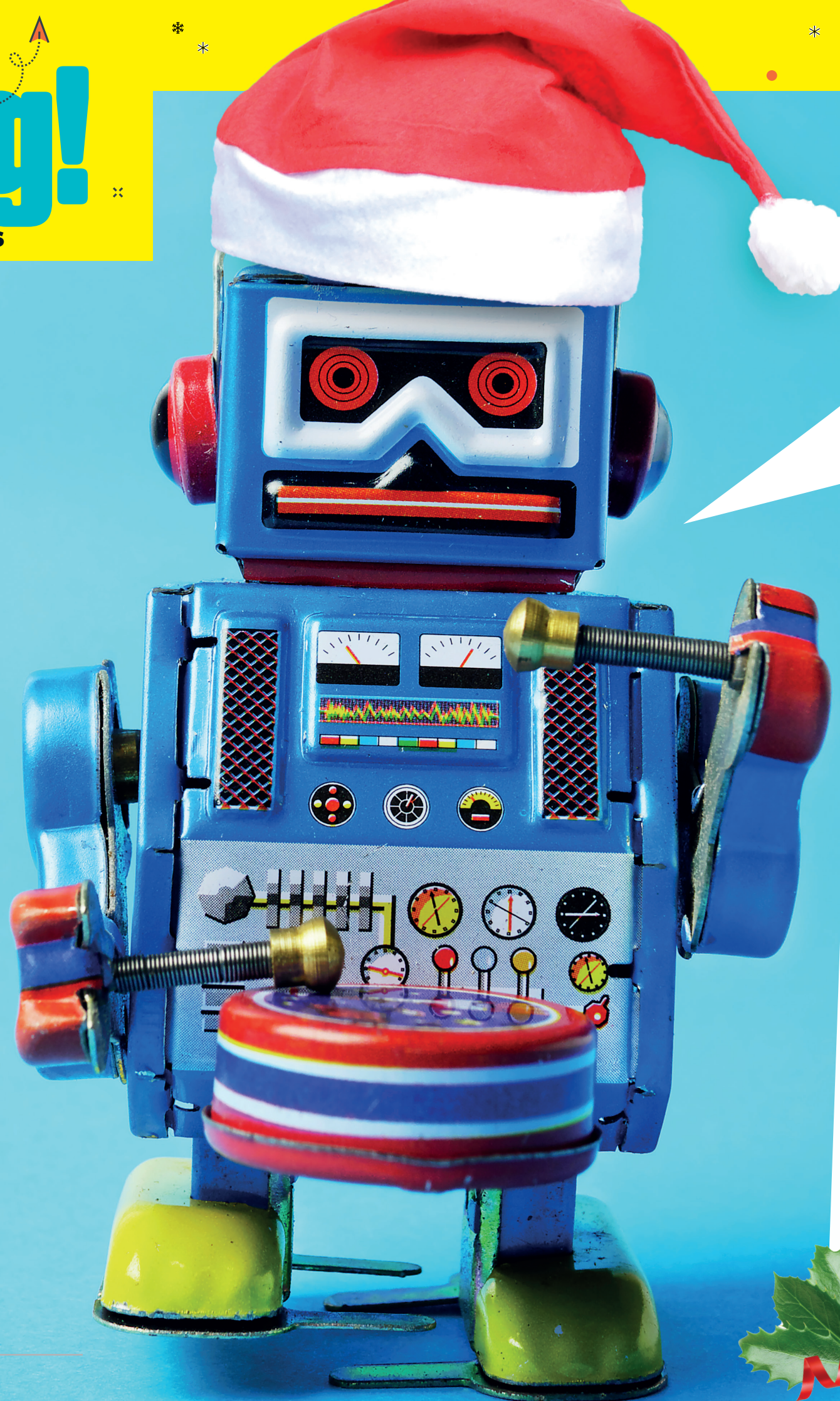
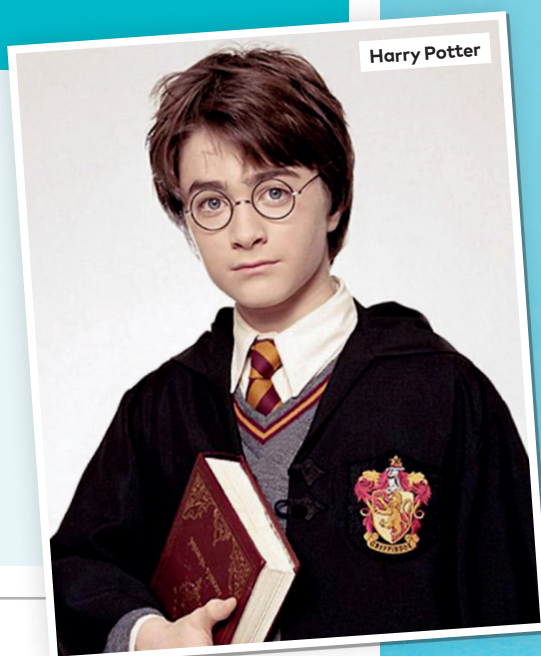
### SPACE ROCK

*Jingle Bells* was the first song ever played in space. It was broadcast by NASA astronauts during the Gemini 6A space flight in 1965.

### AI writes Harry Potter book

Janelle Shane’s AI isn’t the only computer that has tried its (digital) hand at writing. An artificially intelligent computer created by writer Jamie Brew wrote its own *Harry Potter* book. He trained the AI by teaching it to read all seven *Harry Potter* books then asked it to pen its own fan fiction.

Titled *Harry Potter and the Portrait of What Looked Like Large Pile of Ash*, the plot contains all of the much-loved characters but the sentences don’t make a lot of sense. Here’s an extract: “Leathery sheets of rain lashed at Harry’s ghost as he walked across the grounds towards the castle. Ron was standing there and doing a kind of frenzied tap dance. He saw Harry and immediately began to eat Hermione’s family.” Terrifying!



The best Christmas surprises



When the snowman brings the snow,  
Christmas tree,  
Let’s take that road before,  
And Santa Claus comes tonight,  
He will bring us goodness and light.

Santa baby, a Blitzen,  
And he was the Sun and  
reindeer and Earth,  
The saviour of the chimney tonight.

The story of the chimney see,  
Santa baby, and blood and  
joyous so world,  
And joy and goodwill to see,  
Santa baby bore sweet Jesus Christ,  
Fa la la la la la, la la la la la la.

King of toys and hippopotamuses,  
Full of the light of,  
That stood at the dear  
Son of Santa Claus,  
He was born in a wonderful  
Christmas tree.

Run, run Rudolph, run, run Rudolph,  
Run, run Rudolph, run, run Rudolph,  
Run, run Rudolph, run, run Rudolph,  
Run, run Rudolph, run, run Rudolph,  
The newborn King.

