

Yoti: the AI age verification app that knows more than you think

Can an AI tell your age better than a human? A Times experiment reveals surprising results



Millions of times a day across the world, shop assistants, bouncers and bartenders have to make split-second decisions about someone's age. Sometimes they might thwart a cheeky teenager with a fake ID, or make someone's day by giving them back a few years.

Yet as purchases and socialising moves increasingly online, platforms keep hitting the same hurdle: how can you really check someone's age online?

One UK-based tech company, Yoti, claimed to have the answer, so The Times invited their team to the paper's headquarters for an experiment, pitting their AI against people who have to judge ages every day.

Yoti, which began in 2014 as a free ID app, has created a [facial age-estimation technology](#) that it claims can pretty accurately guess someone's age in real time.

Users take a selfie on their device which is analysed by AI to provide an instant age estimation.

The Times put the technology to the test, asking staff and visitors to the offices one afternoon in May to scan their faces. Photos cannot trick the system as the technology detects the movement of a face looking into the camera.

It quickly became clear that the experiment was a matter of vanity for many people.



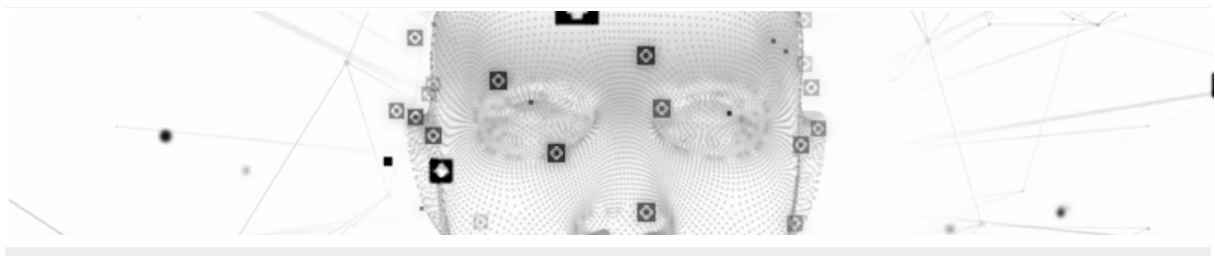
Students trying out YotiJOSHUA BRATT FOR THE TIMES

“I’m so scared, is it going to ruin my day?” one asked.

Groups of office workers teased each other when the Yoti app guessed too high. Some walked away with a youthful glow after the app undershot. One confessed that her Botox was worth the effort, taking four years off her real age, according to Yoti. Some were bang on to the month by the AI.

More than 130 people took selfies, which we also showed to a selection of seven people — including a supermarket worker, super-recogniser, teacher and criminologist — to guess their ages. We compiled these seven predictions to find an average human guess.

Man versus machine



The results showed Yoti to guess ages more accurately at every age group, gender and hair colour than humans. But the technology was not yet perfect.

Shahlaa Tahira, a teacher who was 35 on the date of the experiment, said she is always mistaken for a teenager. The humans on average guessed her as 26.4 years old, yet Yoti accurately gave her 35.6.

“I’m 36 in June,” she said, “Two days ago, I was out with my four and six-year-old not even buying a bottle of alcohol, buying one of those cocktail mixer cans and they ID’d me.



Shahlaa Tahira: "I was ID'd while buying a cocktail mixer can" JOSHUA BRATT FOR THE TIMES

"It happens all the time. Out of all my friendship group I'm the one who they ask, where's your ID?"

"Whenever my age comes out, I get people who've known me for years saying, 'What! I thought we were the same age!' People say, 'You give young energy, your face looks good.'

"So I'm a bit sad after Yoti's accurate result, I feel like I need to do extra moisturiser now."

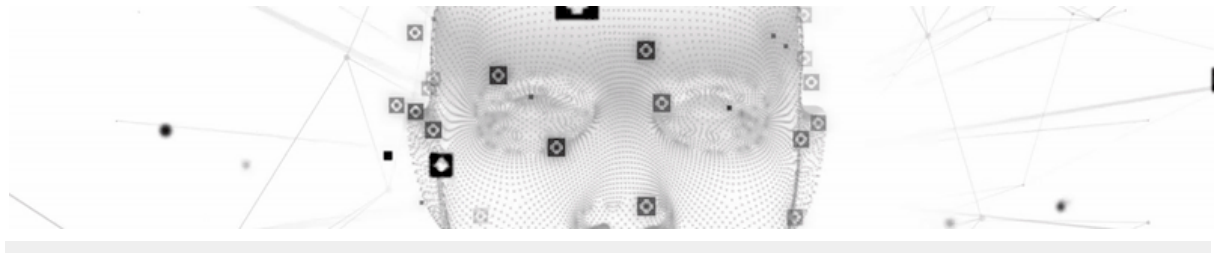
Yoti says its AI algorithm, which has been trained on millions of faces, can estimate the age of 13-24 year olds within 2 years of accuracy, allegedly better than human judgement.

In our small sample size, Yoti's average margin of error was 2.3 years, compared to the humans' 4.2. Yoti guessed 32.1 per cent of people to within a year of their real age, humans only 18.7 per cent.

Humans usually judge someone's age by a myriad of factors, whether consciously or not, such as what they wear, how confidently they speak, their body language and the context in which they meet them.

Yoti, however, just reads the face.

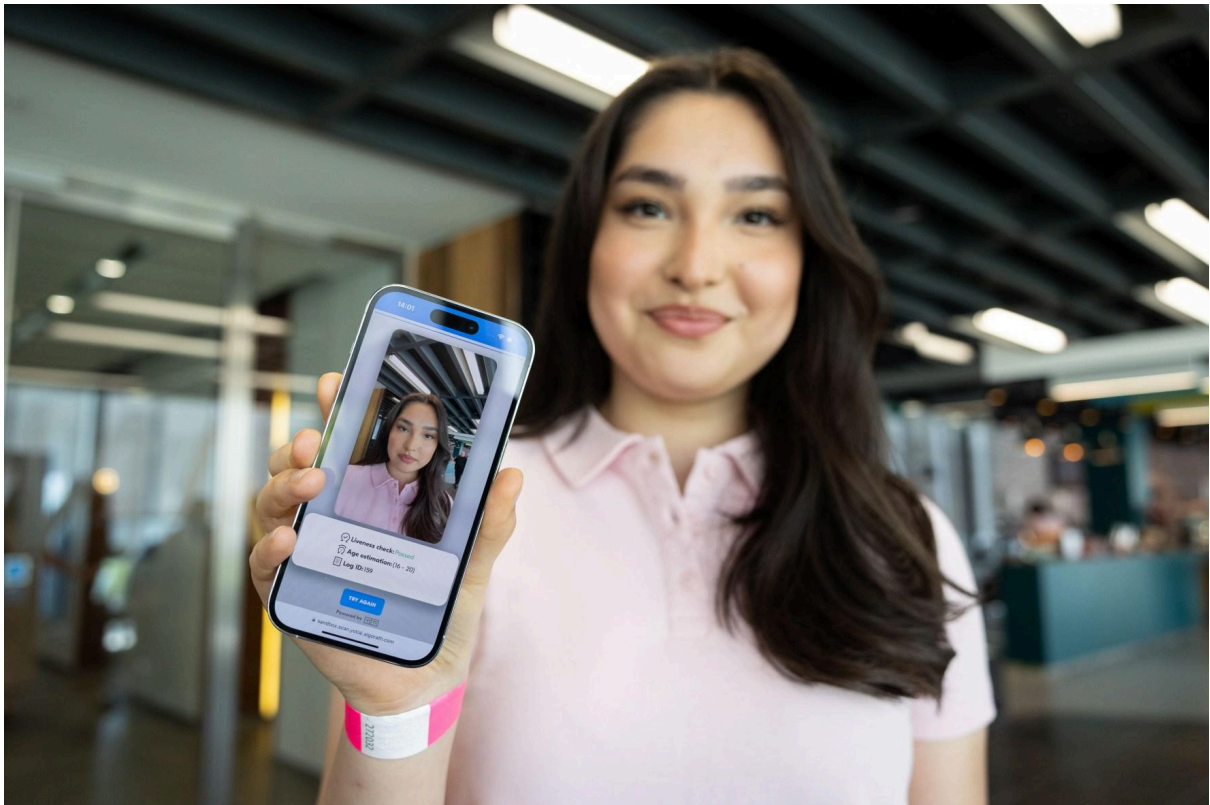
A young man's game



Yoti was most accurate at guessing the youngest age group, predicting 81.5 per cent of under 18s accurately as under 18s.

In reality, to make sure that no under 18s slip through on an adult site, the platforms that work with Yoti set a higher “buffer age” to account for the technology's limits. An example of this in the offline world is the [Challenge 25 policy](#), when bartenders have to ask everyone who looks under 25 for ID to buy alcohol.

Humans only guessed that 22.2 per cent of under 18s were under 18s, although this rose to 29.6 per cent when excluding one guesser who assumed all participants were over 18.

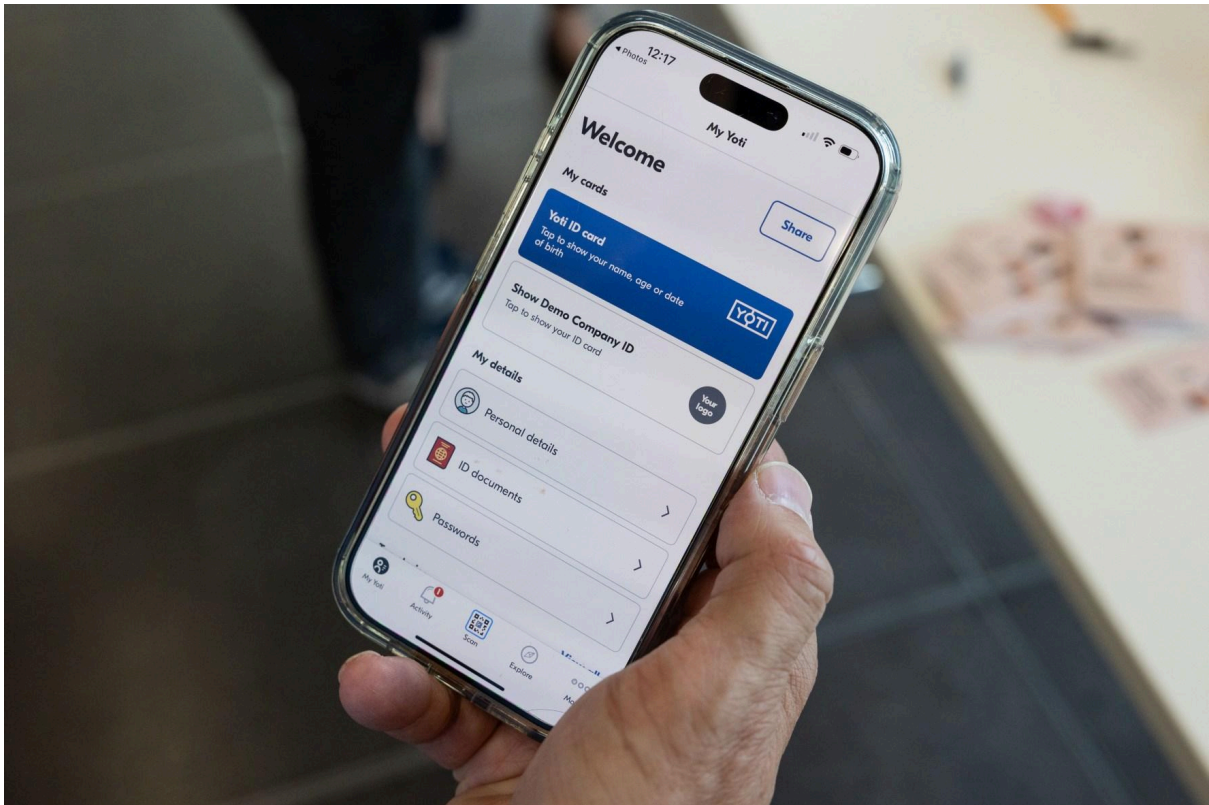


Atena said she was shocked that her correct age was guessed JOSHUA BRATT FOR THE TIMES

Atena, who was 17 and a half years old at the time, was guessed to be 17.6 by Yoti, but 23 by humans.

“People usually tell me I’m very early twenties so I’m shocked to see it got my exact age. It’s also kinda scary because it’s the machine and computer doing it,” she said.

On whether it was easy to fake your age online, Atena said, “100 per cent because there’s no double fact checking, I make multiple emails all the time when I’m scamming Ali Express. I just put 2000 and something or even 1999 and it just doesn’t check it.”



Yoti is being used by some companies online to verify ages of people on age-restrictive websites
JOSHUA BRATT FOR THE TIMES

Robin Tombs, chief executive and co-founder of Yoti, explained that the majority of faces used to train the algorithm were those of people who used Yoti's other features, such as its digital ID, and had consented for their anonymous face to be used.

“We have a much larger group of young people in the Yoti app who need to prove their ID,” Tombs said, but also suggested younger age groups might also be easier to guess, “Every young person has much fewer years of environmental factors on their face from too much drinking or too much sun.”

Humans guessed the 18-25 age group most accurately, while both Yoti and the humans struggled most with over 55s.

Tombs added that their own tests, with sample sizes of over 120,000 people, did not show the same discrepancies.

Both Yoti and the humans tended to skew slightly conservative in their estimates, guessing people were younger than their real age.

However, both struggled more at guessing the older age groups.



Rob McLean: "I have good genes"

Rob McLean, 68, a features sub-editor at The Times, was given a Yoti age of 61.6 and a human guess of 56.6.

"Most people think I look 10 years younger," he said, "I have been exercising regularly since the age of 10, have a good diet and very good genes from my mother, who lived until she was 95."



Claire Kearney: "I have always had quite a 'baby' face"

Claire Kearney, 45, head of learning and development at News UK, was guessed to be 39.7 by Yoti, and 33.9 by the humans.

"I feel quite lucky that most people guess my age as younger," she said, "I have always had quite a 'baby' face, I have put that down to having slightly rounder cheeks!"

"As I have got older I think rather than loads of lines on my face, it's more a tired look which I've not been happy with but to get the Yoti estimation as 6 years younger than my actual age was a good feeling!"

As well as age group, there were small differences between genders and hair.

Yoti was marginally less accurate at guessing the age of male faces than female faces. Humans however were marginally better at guessing female faces.

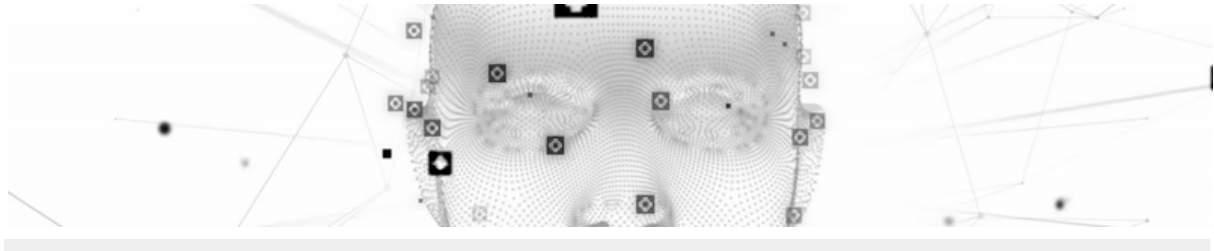
Although the sample sizes were small, both were least accurate at guessing people with grey hair, with Yoti guessing people were on average 3.7 years younger and humans guessing they were on average 6.8 years younger than their real age.

The opposite was true for redheads, with Yoti guessing people with red hair were 1.4 years older and humans guessing they were 5.1 years older than they were.

Facial hair, similarly, threw Yoti off, with Yoti guessing those with facial hair to be on average 2.6 years younger than they were.

Yoti added that their own tests of far greater sample sizes did not show the same discrepancies.

Is this the future?



A group of college students visiting The Times said how often they were challenged over their age in real life: at the cinema; when using their TfL 11-15 Zip cards. Few described having to prove their age online. But that will slowly change as new laws such as the Online Safety Act fully kick in from July 24.

Yoti's tech is already being used on some adult and social media sites like OnlyFans and Facebook Dating. John Lewis has become the first major retailer to [add facial age estimation at the checkout when customers buy knives online](#).

But according to the regulator Ofcom, to get very high levels of accuracy with facial age estimation you still have to use a "buffer age", that is, set a pass rate at a high threshold to account for the technology's error rate.

Iain Corby, executive director of the Age Verification Providers Association, said: "We still have to find, therefore, a good way of doing exact age verification for kids, which they're discovering in Australia [which is implementing a social media ban for under-16s]. You probably need access to school data and have the schools cooperate. That's the easiest way to do it."