GLIMPSES OF THE FUTURE

A monthly digest of technologies, developments and trends that may shape our lives. (If you would prefer not to receive these digests, flip back 'NO THANKS' and you will be removed from the list). For daily glimpses follow me on Twitter: @hammondfuturist

New Lidar Claimed To Have 50x Resolution Of Existing Systems

A 22-year-old Silicon Valley engineer, who was paid by a venture capitalist to skip college, has launched a start-up which aims to solve one of the toughest technical challenges in autonomous driving.

Austin Russell founded Luminar Technologies in 2012, when he was just 17, to create a new version of the laser-based imaging sensor that is known in the automotive industry as Lidar.

Backed by investors including the well-known venture capitalist Peter Thiel, Austin Russell unveiled Luminar last month after five years of secretive development, claiming a 50-fold improvement in resolution compared with existing Lidar products.

Lidar sensors have become a key enabler of self-driving cars because they allow vehicles to "see" the world around them, enabling vehicles to navigate and avoid obstacles. Uber and Alphabet's self-driving car unit, Waymo, are locked in a bitter legal battle over allegations of stolen Lidar designs.

Trying To Measure The Digital Economy

Britain's top statisticians plan to track mobile phones, monitor car journeys, and scour the entire country via satellite in an attempt to get a "real-time" snapshot of the size of the UK economy.

Radical new methods of data collection and analysis are set to be used by the Office for National Statistics (ONS) as it modernises the way it does business, and plans how to keep track of an economy which is rapidly changing.

Dozens of analysts have been hired to run the ONS's new Data Science Campus in Newport, beefing up the official agency's ability to provide high quality, up to date information.

About time.

VTOL Electric Flying Taxi Completes Maiden Flight

Lilium, a start-up, based in Munich, Germany, has ambitions to dominate airspace and offer an on-demand flying taxi service it claims will be five times faster than a car. And while the 40-engineer firm has a long way to go to reach this

Google Launches Smart Watch To Collect Biometric Data

Verily Life Sciences, the health spinout of search giant Google, unveiled a health tracking watch that it plans to deploy in large-scale medical studies.

The gadget, known simply as "Study Watch," looks like an ordinary wrist watch and has a low-power e-ink type display.

With the watch, Verily says it now has a way to unobtrusively, but continuously, collect physiological data from volunteers. According to Verily, the gadget collects heart rate, electrocardiograms, movement data, as well as a measure of the electrical conductance of the skin. It also detects ambient light and sound.

The watch isn't for sale. Instead, it an "investigational device" that will be used in clinical studies, including "Baseline," Verily's long-planned effort to discover biomarkers by tracking thousands of healthy people, including as they become ill.

Mercedes Will Offer Home Batteries

Tesla was the first car maker to offer batteries for powering domestic homes (the Tesla PowerWall) but Mercedes is now entering the market with its own storage system for electricity.

vision, it has just overcome its first major hurdle following the initial test flights of its electric plane.

Lilium's zero-emission prototype aircraft seats two people and is powered by electric motors. It takes off vertically like a helicopter, using its vertical take-off and landing (VTOL) system, and flies using the lift from its engines.

During manoeuvres, flaps on the aircraft's wings point down to help create a vertical thrust; when positioned horizontally, the aircraft flies like a conventional plane. For safety, the aircraft's engines are individually shielded, so the failure of a single unit doesn't affect adjacent engines, and the entire aircraft has its own parachute.

Can Blood From Young People Make The Old Young Again?

The rejuvenating properties of young blood came to light in macabre experiments that stitched young and old mice together to share a circulatory system. The health of the older mice improved, while that of the younger ones deteriorated. Other animal studies have since shown that injections of young or old blood have similar effects.

This may work in people too. Young blood is being trialled as a treatment for conditions like Alzheimer's, and aged mice that received injections of blood from human teenagers showed improved cognition, memory and physical activity levels.

Although they'll be slotting into homes, the Mercedes-Benz batteries have their roots in the automotive world. Developed by ACCUmotive, the Daimler subsidiary responsible for the batteries in production Mercedes hybrids, the lithium-ion cells can be used to store energy generated by home solar systems or wind turbines.

Each battery pack can store 2.5 kWh, and the modular nature of the system means up to eight can be combined for a total capacity of 20 kWh. Each individual unit is a compact block, and the batteries can be integrated and wall-mounted in one neat unit for a clean look. That's a different approach to the Tesla Powerwall, which comes in 7.5 kWh and 10 kWh capacities, and can be scaled to 58 kWh using multiple units.

Driverless Taxis Could Be On London Streets In Two Years

Members of the public could be able to summon driverless cars in two years' time after the Government backed a consortium looking to test the technology in London.

The Departments for Business and Transport have handed the group £12.8m to research and develop self-driving technology ahead of a trial in the capital.

But these studies rely on young people donating their blood: if this became the go-to therapy for age-related disease it would be difficult to get enough donations to fulfil demand.

The stem cells in our blood could provide an alternative approach. Our red and white blood cells are made by stem cells that themselves come from "mother" stem cells in bone marrow. But as we age, the number of these mother stem cells declines. One of the world's longest-lived women seemed to only have two left in her blood when she died at age 115.

And in a separate announcement from the same group of researchers, it turns out the fountain of youth might be coursing through human umbilical cords. At least that's part of the findings from a team that saw some impressive results when the substance was injected into old mice suffering from cognitive decline. The discovery might help combat age-related mental impairments.

Kitty Hawk Launches "Flying Car"

Kitty Hawk, the mysterious flying-car start-up backed by Alphabet CEO Larry Page, has finally launched, and it says its first vehicle will be available by the end of this year.

The Kitty Hawk Flyer is an electric aircraft that, in its current version, looks a bit like a flying Jet Ski. Cimeron Morrissey, who test flew the aircraft, wrote in a review that the final version would look quite different from the prototype, which doesn't look all that practical.

FiveAI, a Cambridge-based artificial intelligence firm, is developing the trial with Direct Line, the University of Oxford, Transport for London and the Transport Research Laboratory.

It plans to demonstrate a fully-working driverless car system, including the ability to order rides with a smartphone app, and insurance and safety protocols, in the third quarter of 2019. Stan Boland, the chief executive of FiveAI, said it would use around 10 electric cars, with the trial in South London intended to serve commuters who drive to work.

Now Your Voice Can Be Cloned

Utter 160 or so French or English phrases into a phone app developed by CandyVoice, a new Parisian company, and the app's software will reassemble tiny slices of those sounds to enunciate, in a plausible simulacrum of your own dulcet tones, whatever typed words it is subsequently fed.

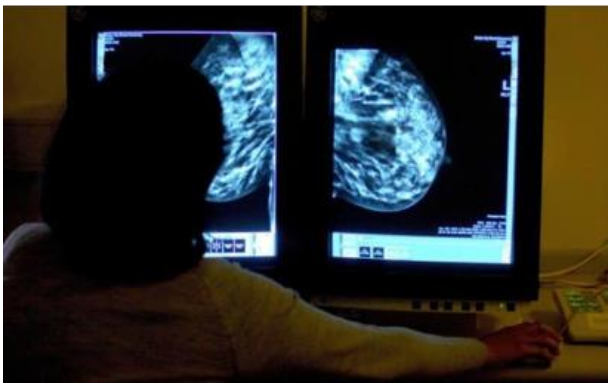
In effect, the app has cloned your voice. The result still sounds a little synthetic but CandyVoice's boss, Jean-Luc Crébouw, reckons advances in the firm's algorithms will render it increasingly natural.

A New York Times profile of the Flyer describes it as "something Luke Skywalker would have built out of spare parts." The vehicle weighs about 100 kilograms and, according to Morrissey, can travel up to 25 mph. She likened the Flyer to "a toy helicopter."

According to the Kitty Hawk site, the machine is "safe, tested, and legal to operate in the US" as long as you fly it in "uncongested areas." You don't need a pilot's license to fly it, and Kitty Hawk says you can learn how to pilot it in just a few hours.

New Blood Test Detects Cancer – And Its Location

A blood test which not only detects cancer but identifies where it is in the body, has been developed by scientists.



The breakthrough could allow doctors to diagnose specific cancers much earlier, even before signs such as a lump, begin to show.

Similar software for English and four widely spoken Indian languages, developed under the name of Festvox, by Carnegie Mellon University's Language Technologies Institute, is also available. And Baidu, a Chinese internet giant, says it has software that needs only 50 sentences to simulate a person's voice.

Until recently, voice cloning—or voice banking, as it was previously known—was a bespoke industry which served those at risk of losing the power of speech to cancer or surgery. Creating a synthetic copy of a voice was a lengthy and pricey process. It meant recording many phrases, each spoken many times, with different emotional emphases and in different contexts (statement, question, command and so forth), in order to cover all possible pronunciations.

It is simple enough to be included in routine annual health checks alongside other tests such as for high blood pressure or cholesterol.

The test, called CancerLocator, has been developed by the University of California, and works by hunting for the DNA from tumours which circulates in the blood of cancer patients.

The team discovered that tumours which arise in different parts of the body hold a distinctive 'footprint' which a computer can spot and which suggests the location of a tumour.