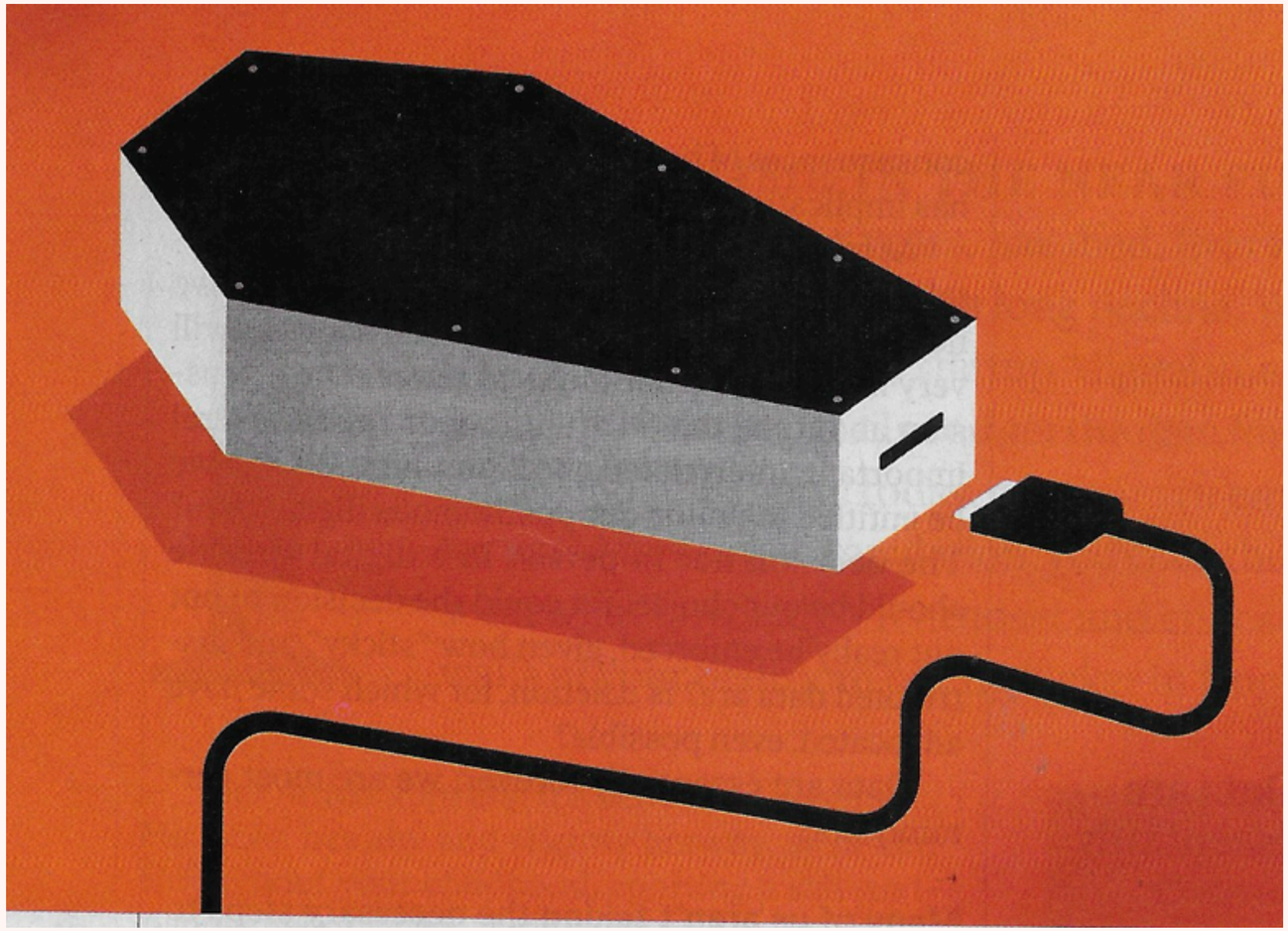
TECH SLAM

APRIL 4, 2024

Torben Riise

BIF - ANTHEM



Our Digital Afterlife

Datafication of our lives means we must confront the fact that our digital data will outlive our physical self.

Notes are based on a book called:
We, the Data: Human Rights in the Digital Age
by Wendy H. Wong - MIT Press 2023

Technology foundation

Text, sounds, visuals, movements - everything that characterizes us can be re-created with increasingly nature-like accuracy . . . in other words, a person can be seen, heard and appearing to be alive, even be someone you can have a conversation with . . . long after that person has died.

These technologies already exist and are getting better and better.

As of 2023, 57 mostly smaller companies are in the business of digital afterlife

Cont’d . . .

Problems

- We leave a LOT of information behind us when we die
- Our digital afterlife self - “DAS” - can be (is being) re-created without our permission
- DAS may say and do things we would never have said or done when we were alive*
  - Even if true, information we never shared with anyone when we were alive, may come out, e.g.
    - a career no one knew about
    - a sibling, a child, an x-spouse no one knew about

*) Microsoft has a patent on a *conversational* chat-bot on a person based on social media profiles

Cont’d . . .

Ethical dilemmas

- Who has the right to our digital afterlife?
    - Do we ourself (does that even make sense)?
    - The person/org who created DAS
    - No one? (it’s in public domain)

- How will those left behind feel about getting to know anew the person they thought they knew? (“I had no idea…”)

Cont’d . . .

Ethical dilemmas

Chatbots present a particular problem:
They are based on input we have created when alive - they represent what we were and what we would say, do, and decide - typically in a conversational style that can be activated by others.

While we have rules and regulation in regards to our assets before we die . . . the data that form the basis of chatbots are not assets: They are "us" - still there's no way to stop someone (who have access to our digital life) from bringing us back to 'life' (unless they respect our wishes about it . . . and *that* is based on having expressed them while we could).

Cont'd . . .

Ethical dilemmas

The idea of “bringing us back” may seem acceptable if we think about data as “by-products” of people, but if data represent our identities, we should pause before we allow "digital reproduction” of people.

That is particularly important because maliciously fabricated information might be inserted (deep fake) into the chatbots, driving outcomes that are (significantly) different from what the deceased person was and/or might have wanted to portray; i.e. DAS becomes different from the original person.

Cont’d . . .

Other problems

Human rights are not considered in the context of our digital afterlife because they refer to **our physical life**.

We do not (yet) have a language and much less a legal framework for dealing with this complex of problems . . . so what do we do?

Plan ahead!

Cont’d . . .

Planing ahead

- ***We*** **should define our posthumous digital lives incl. the decision not to persist as DAS**
- **But that creates a new question:**

  Can a decision to opt out be enforced?
- **Is “deletion” even technically possible?**

Before **we face that situation, we should take some steps to manage our “digital remains” . . . while we can!**

Here are some recommendations . . .

Cont’d . . .

Digital estate planning: A checklist

☐ **Do an inventory of your digital assets.** These may include:

- hardware like computers, cellphones, and external drives and the data stored within, including files and browser history;
- data stored on the cloud;
- online accounts for things such as email, social media, photo and video sharing, gaming sites, shopping sites, money management sites, and crypto-currency wallets;
- any websites or blogs that you manage;
- intellectual property such as copyrighted material and code;
- business assets such as domain names, mailing lists, and customer information.

☐ **Decide what you want done with each of these assets.** Do you want accounts deleted, or preserved for your loved ones? Should revenue-generating assets like online stores be shut down, or continue to operate under someone else's guidance? Write down the plan, including necessary login and password information.

☐ **Name a digital executor.** This executor should be someone you trust to carry out your wishes.

☐ **Store the plan in a secure location, either in digital or paper form.** Make sure your next of kin know where your plan is and how to access it.

☐ **Formalize it by adding the information about your executor and your plan to your will.** Don't make the plan itself part of your will, because wills become public records, and you don't want sensitive information available to everyone.

Cont'd . . .

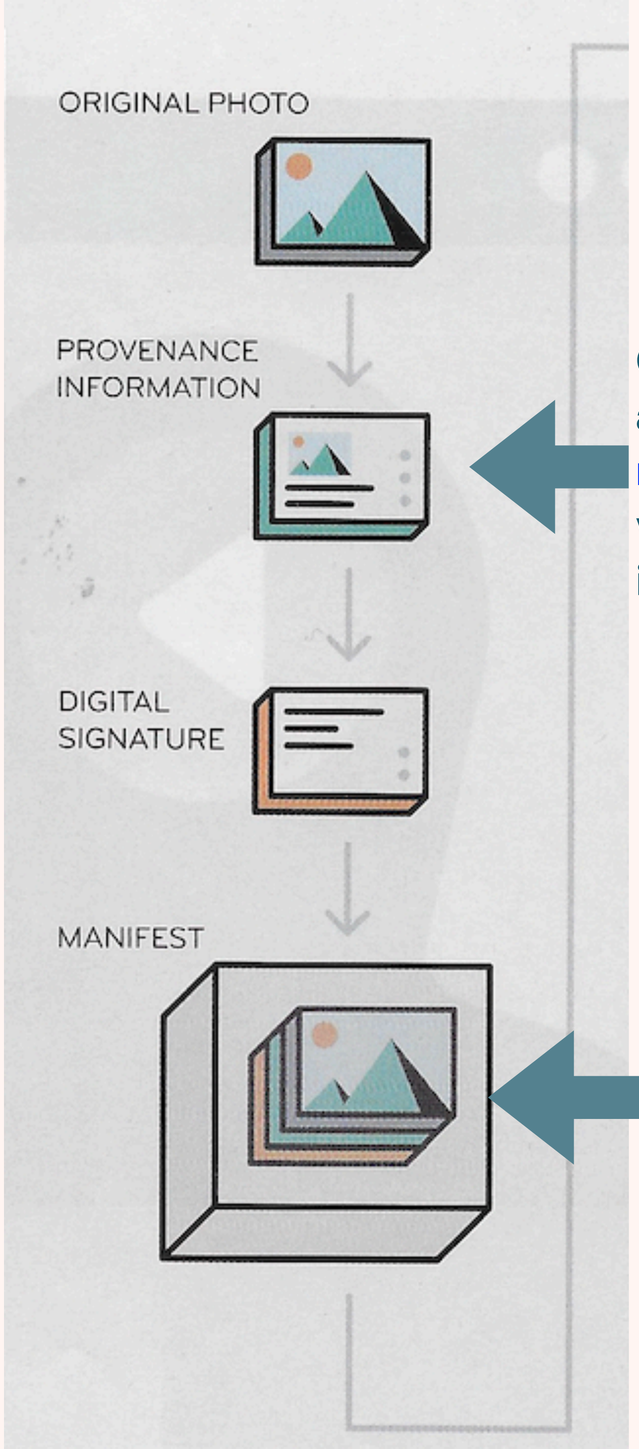
Speaking about Deep Fake and Truth We have a problem:

In the 2024 election, we do not only have two candidates running against each other, we have Deep Fake running against Truth.

But we have a solution:

A digital watermark on all photos/videos: Project Origin

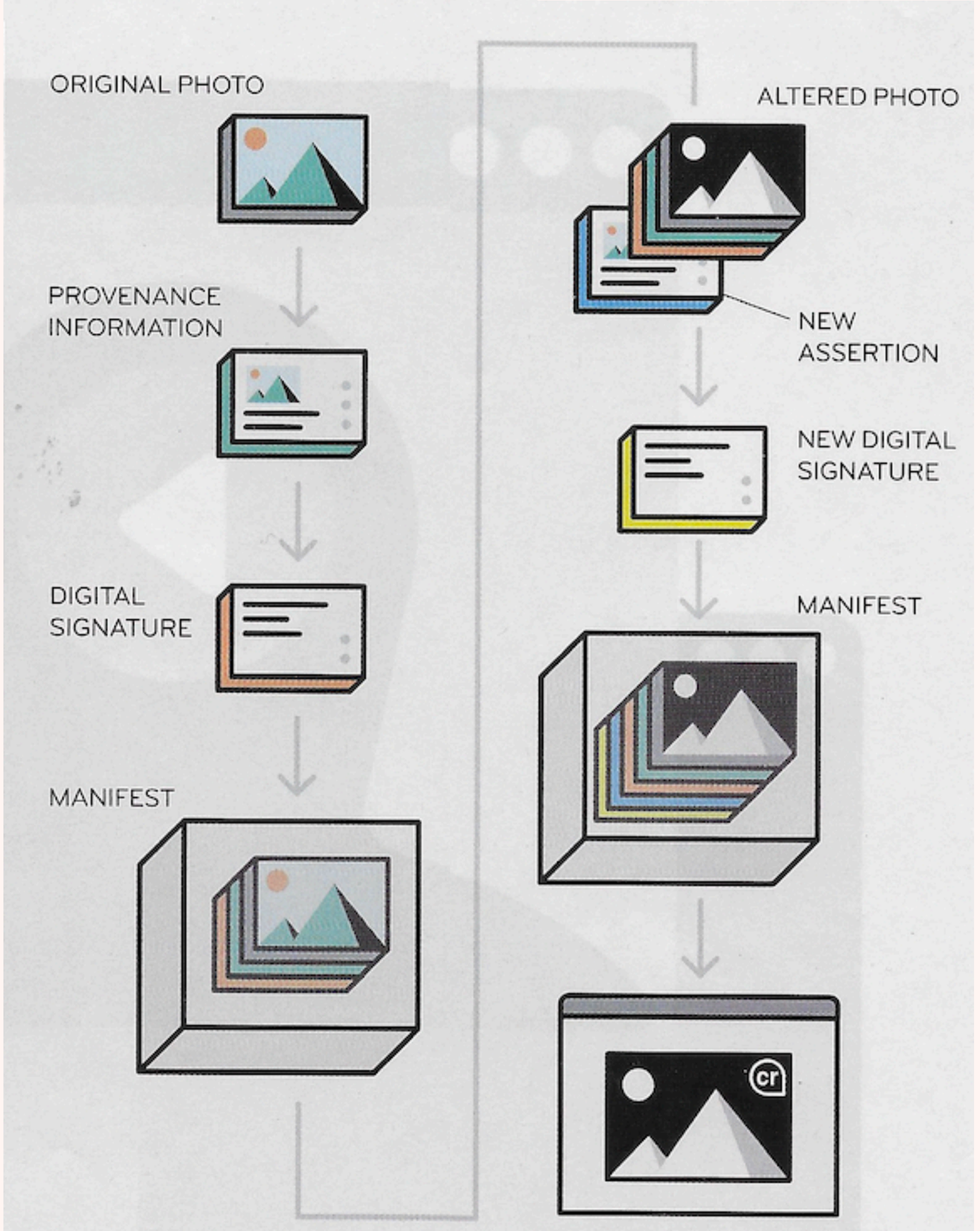
An Adobe based system implemented by Coalition for Content Provenance and Authentication (C2PA) which tracks all changes made to an original photo's/video's metadata . . .



Cryptographically attaching secure metadata to images and videos . . . called provenance information

File with tamper-evident manifest

In the content-credentials system, an original photo is supplemented with provenance information and a digital signature that are bundled together in a tamper-evident manifest. If another user alters the photo using an approved tool, new assertions are added to the manifest. When the image shows up on a Web page, viewers can click the content-credentials logo for information about how the image was created and altered.



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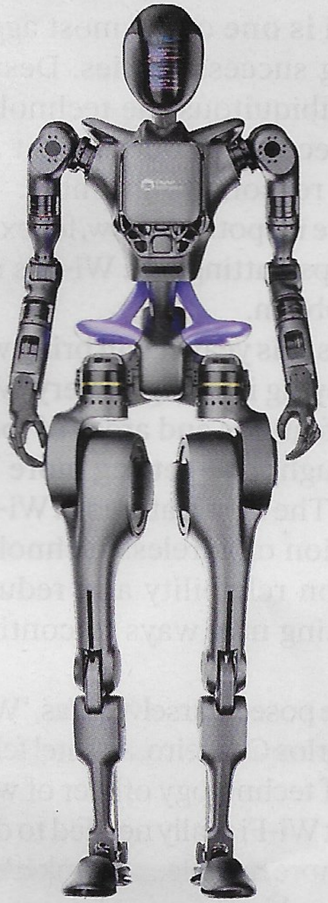
The world of robots

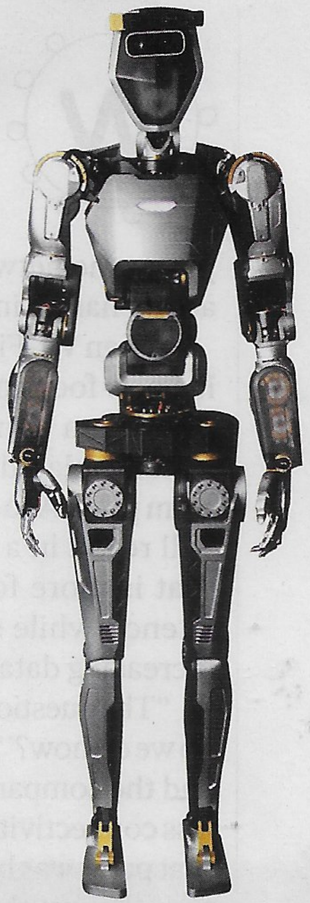
Whats coming in 2024-2025

Will they replace human workers?



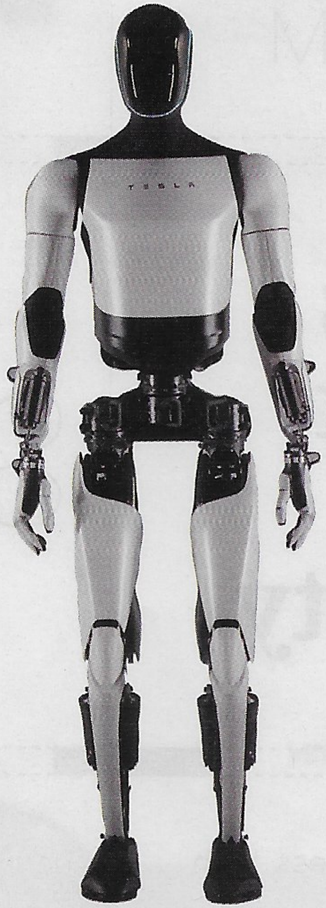
FOURIER INTELLIGENCE: GR-1

Singapore-based Fourier Intelligence is already mass-producing its GR-1 robot. Fourier's background is in health-care robotics, and the company sees potential applications for GR-1 in medical and rehabilitation contexts, although the robot will also be available to researchers seeking a humanoid development platform.



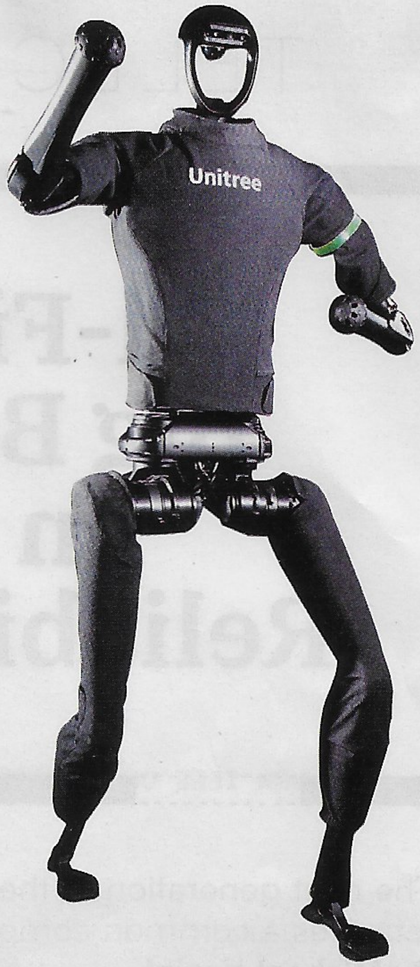
SANCTUARY AI: PHOENIX

Sanctuary AI's goal is to "create the world's first humanlike intelligence in general-purpose robots." To accomplish this, the company has been collecting extensive amounts of data of humans teleoperating its robots through complex manipulation tasks. Sanctuary AI hopes to leverage that data to train its robots to perform those tasks autonomously.



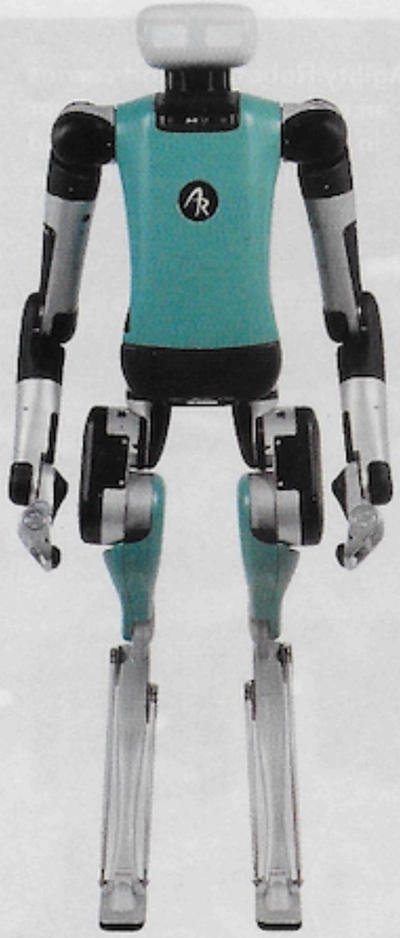
TESLA: OPTIMUS

Tesla has some unique advantages when it comes to building and deploying robots. The company has substantial experience in battery technology, as well as in sensing and computing for mobile systems. And Tesla is potentially its own first customer for humanoids, finding work for them in its car factories.



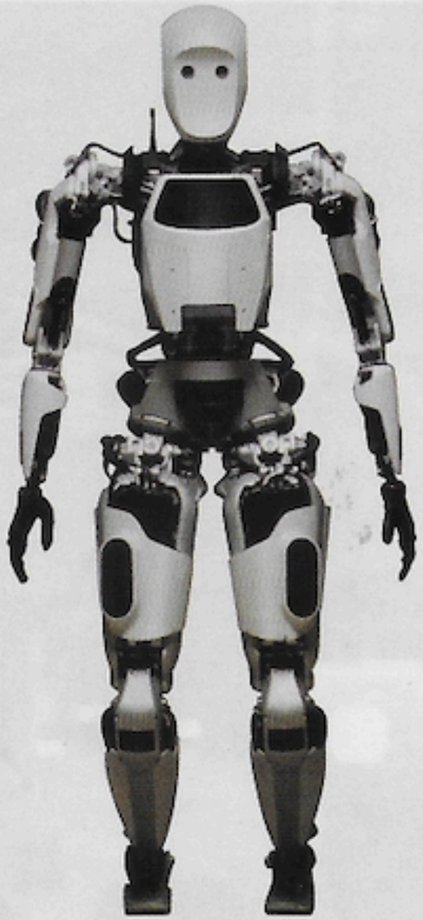
UNITREE ROBOTICS: H1

Unitree, founded in China in 2016, is well known for making quadrupedal robots that are capable and very low-cost. Unitree's first humanoid will cost less than US $90,000 and is designed to be an affordable hardware platform for robotics research, or for companies that want to focus on developing software rather than hardware.



AGILITY ROBOTICS: DIGIT

Digit is most accurately described as "bipedal" rather than "humanoid." It has two legs, but its legs look more like those of an ostrich rather than a human's. This is a side effect of Agility's design process, the goal of which was to maximize the efficiency and robustness of legged locomotion.



APPTRONIK: APOLLO

Apptronik has worked on more than half a dozen humanoid robots over the past eight years, including NASA's Valkyrie. Apollo is the culmination of all this experience and is designed for manufacturability. Apptronik plans to field its robots in 10 pilot projects in 2024, with a full commercial release of Apollo in 2025.

1X TECHNOLOGIES: NEO

1X's soft, tendon-based robot is designed to have very low inertia, so that it's safe for humans to be around. The robot will weigh just 30 kilograms, with a carrying capacity of up to 20 kg. 1X, backed by OpenAI, hopes that Neo will become "an all-purpose android assistant to your daily life."

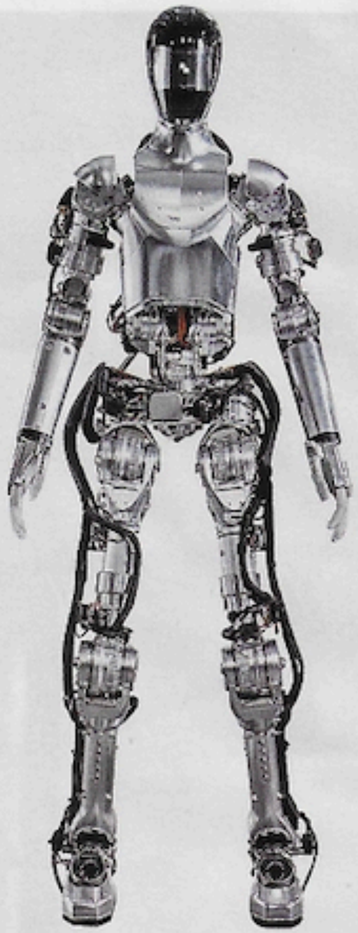


FIGURE: FIGURE 01

Figure was founded just a few years ago, but its robotics team is very experienced, tracing its heritage back through the DARPA Robotics Challenge. By iterating very quickly through hardware prototypes, Figure expects to demonstrate a commercially viable humanoid within the next 18 months and scale from there.

Agility's DIGIT robot:

Price: Expected to be around $250,000

Expected work-life:

5 years, 2 shifts @ 8 hrs

= Total of 20,000 hours

That is an hourly rate of $12.50

A service contract will probably add $2-3/hr making it at par with human cost.

Min. salary in USA is $15/hr.

Video from Amazon:
https://youtu.be/-XOyT5q2NwE

Article about Digit:
https://www.geekwire.com/2023/getting-to-know-digit-the-humanoid-robot-that-amazon-just-started-testing-for-warehouse-work/

A nightlight w/o electricity

A Danish research team took **the genes that make fungi glow green at night** and put them **into a petunia** . . . and now you have a night lamp plant that runs without electricity. It has been approved for marketing in the United States.