

Robotics in Industry and HealthCare





Robots in industries

Evolution of robotic in industries

1954 - First programmable industrial robot (by George Charles devol)

1973 - First industrial robot with 6 axis controlled eclectromechanicly (by KUKA)

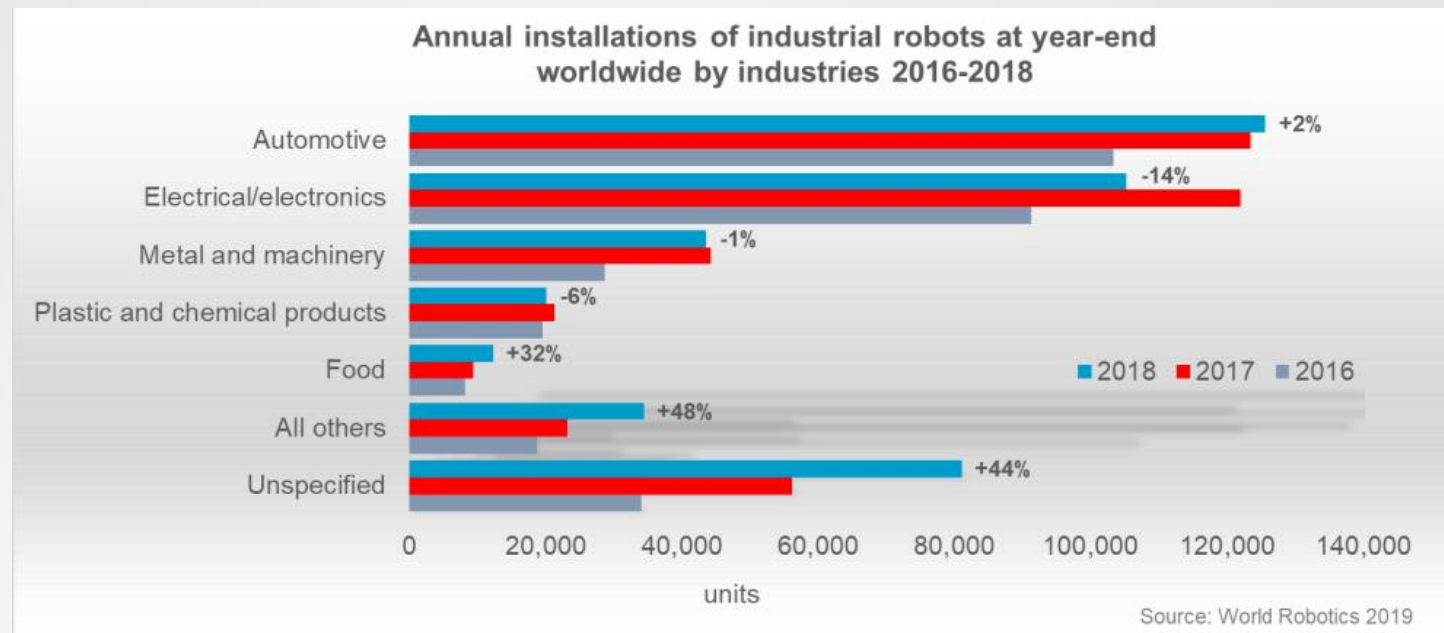
1977 - Robot with 5 axis able to carry 10 kilos (commercialized by Vicarm Inc)

1978 - PUMA: an assembly robot (by Unimation and still used currently in laboratories)

1981 - First robot with motorized arms (by Takeo Kanade)

1998 - Control systems can synchronise 4 robots simultaneously and manage 27 axis

Some data



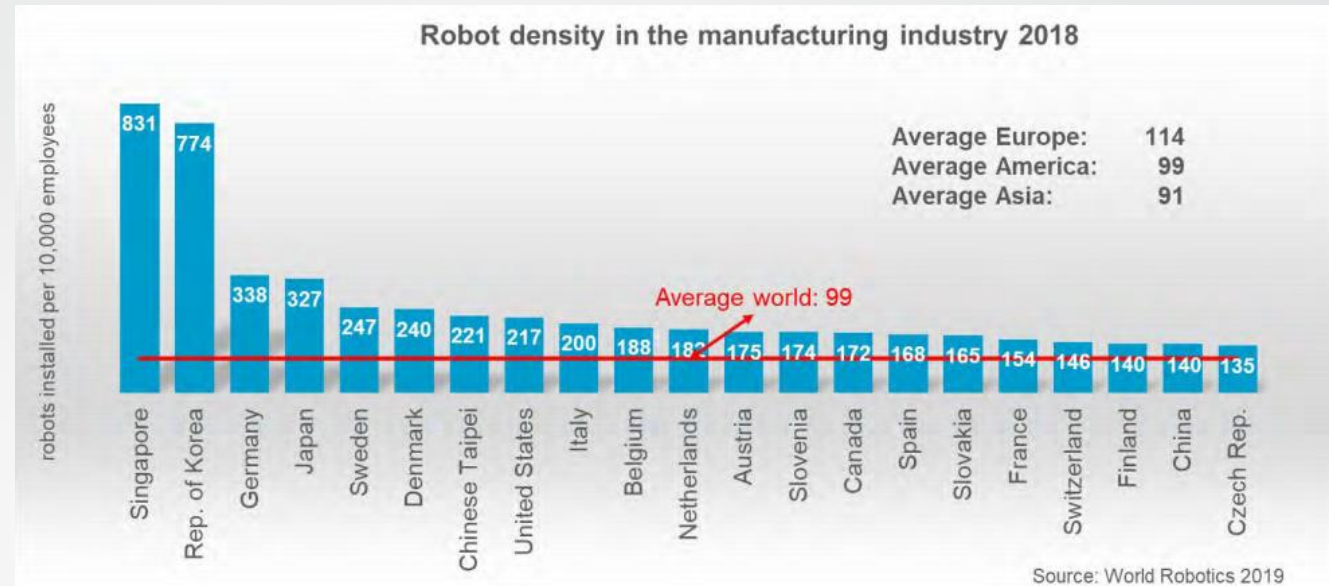
Mainly need robots for:

- automotive
- electronic

Increasing of need of robots:

- entertainment
 - farming
 - domestic tasks
 - healthcare
- (not specified on the graph)






Highest robot density (robots / 10 000 employees):

- Singapore (831) - Rep. of Korea (774)

World average: 99

- France: 154 - China: 140 - USA: 217

density USA > density France > density China

A white Pepper robot is shown in a hospital setting, holding a tablet. The robot has large, expressive blue eyes and a friendly appearance. The tablet it is holding displays the name 'pepper' in a stylized font, along with logos for QUT, Advance Queensland, and SoftBank. The background shows a hospital room with blue curtains and medical equipment.

Robots in healthcare

1) The surgical robot

These one are really helpful: they help surgeons with their operations. It has to be precise and not to let only one error threw the system.

⚠ Does not REPLACE them.

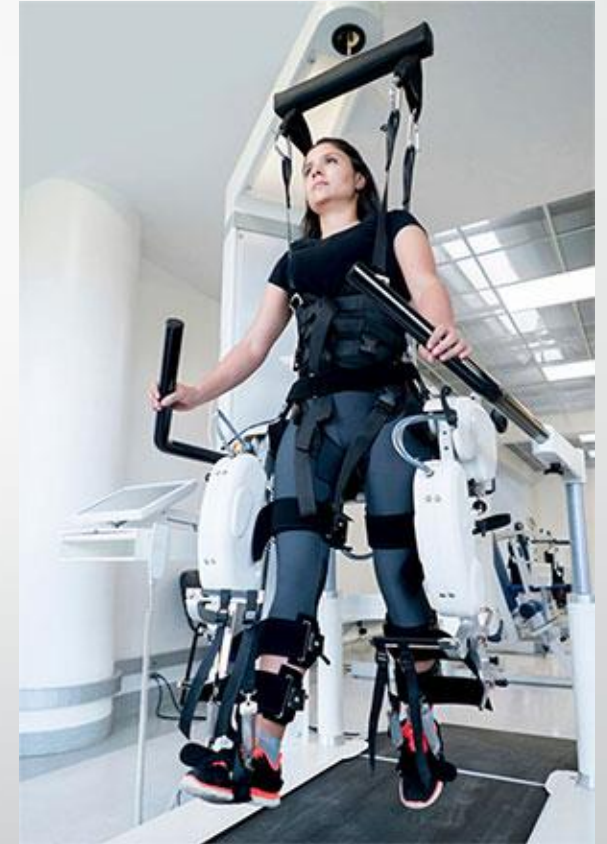
First appearance: 1990



II) Rehabilitation Robots

Allows people with sicknesses or handicaps to have a regular sportive activity, and to use muscles. Exists to walk, to move only the head, arms or legs.

First appearance: 1989



III) Robot nurse

The two robots next to the nurse are her colleagues! They are up to serve sick people, to do the little things and to help human nurses. They do not replace them!

First appearance: 2018



IV) Hospital logistic robot

Here is a transport robot which helps the nursing staff in transporting food, medicines, papers, books... to patients.

First appearance : 2005



V) Tele presence robot

This robot is used by people who can no longer move because of sickness or a much serious handicap. It allows them to demonstrate their presence even if they do not move from home. It is controlled by a joystick and it can be used at school too.

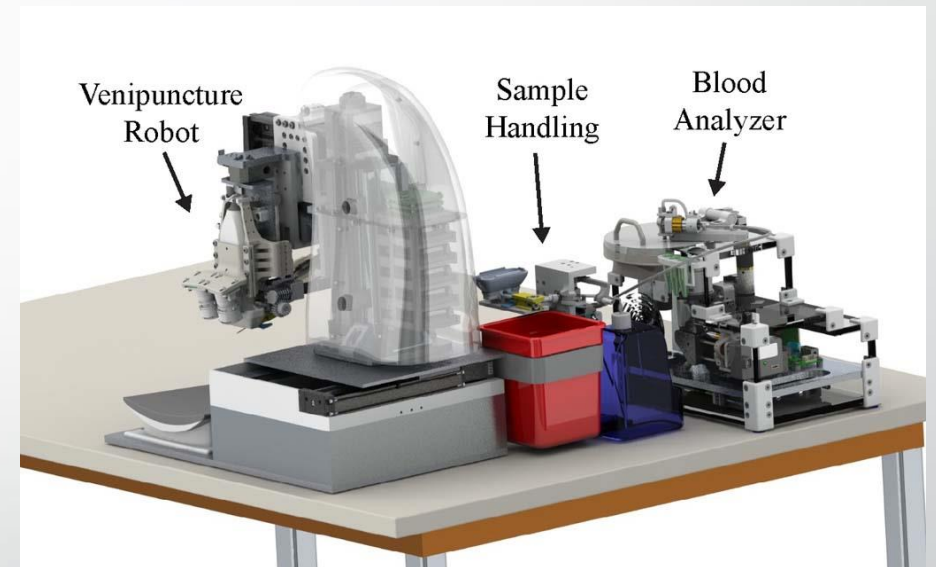
First appearance: 2014



V) Diagnostic robot

This one is a blood diagnostic robot, but there are much more! Like eyes diagnostic, autism, etc.
It could replace some jobs...

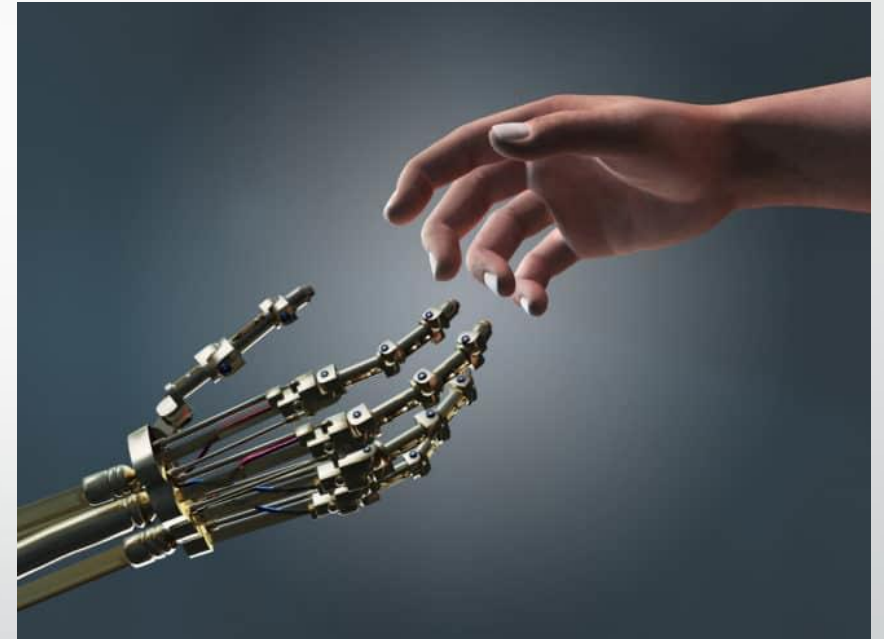
First appearance: 1970

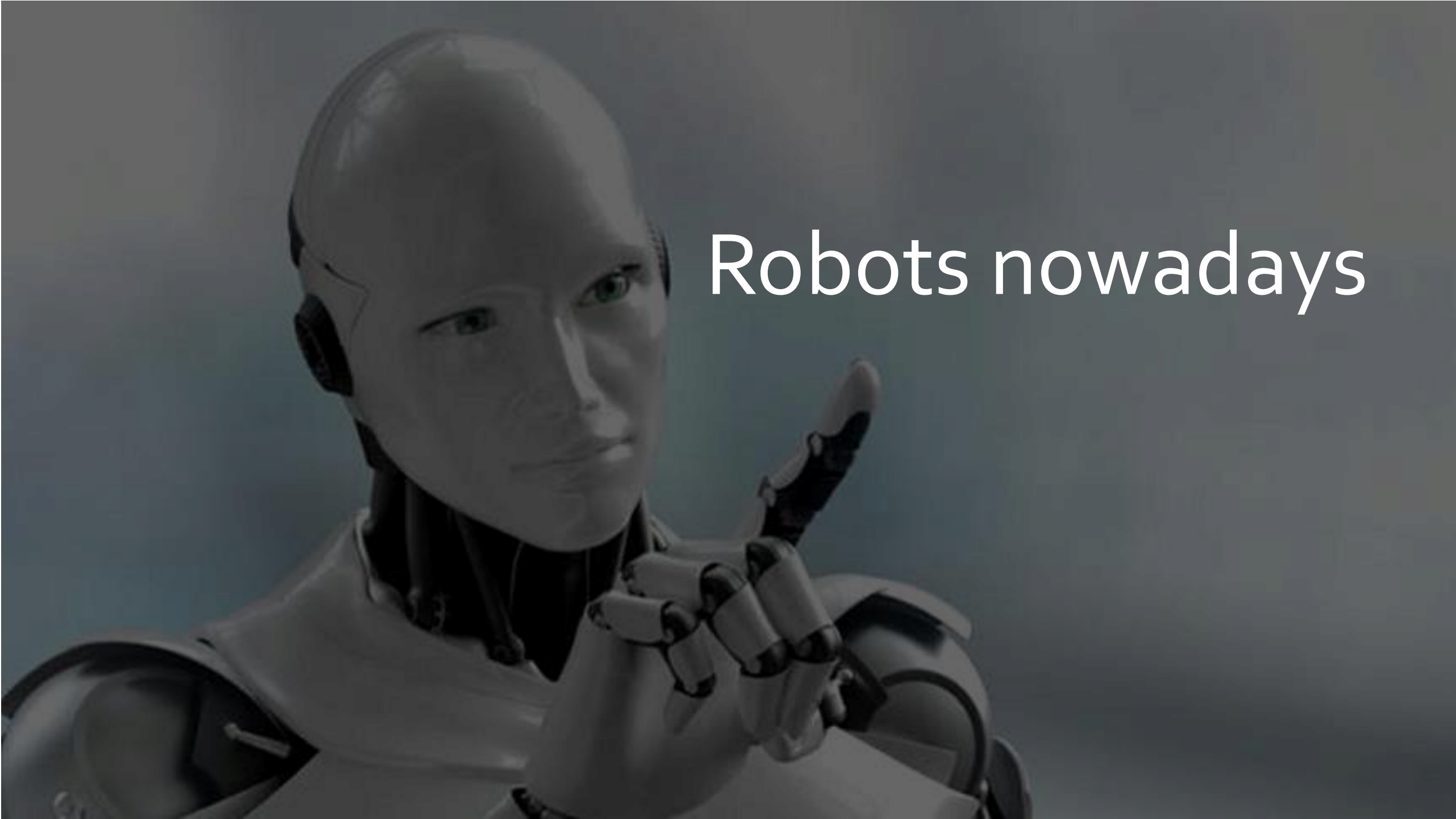


VI) The prosthesis


To sum up, we have the most famous robot in healthcare: it exists since the dawn of time, because not having a hand, an arm or a leg can be very restrictive. Nowadays, they are directly connected to the nerves and obey to the will of the user.

First appearance (as a robot): 2002





Robots nowadays

The image is a composite graphic. The left side features a dark, textured background with numerous faint, semi-transparent drone silhouettes scattered across it. The right side is a cutaway view, indicated by a diagonal line, showing a bright green grassy field where several white quadcopter drones are parked. The text is overlaid on the dark background on the left.

This drone field is the “take-off runway” for drones deployed by the Chinese government to Wu Han during the coronavirus epidemic



In case of the coronavirus epidemic, robotic objects have been created to replace hands (to hold or touch everyday objects)

Military robots
are used to
fight against
coronavirus

The screenshot shows a web browser window displaying a BFM TV video player. The browser's address bar shows the URL: <https://www.bfmtv.com/mediaplayer/video/coronavirus-les-hopitaux-chinois-font-appel-aux-robots-1226415.html>. The BFM TV logo is visible in the top right corner of the page. Below the logo is a navigation menu with categories: VIDÉOS, POLITIQUE, POLICE-JUSTICE, INTERNATIONAL, SOCIÉTÉ, ÉCONOMIE, TECH, AUTO, SANTÉ, SPORT, PEOPLE, CHEZ V. The video player itself shows a news report. The main video frame displays a tracked military robot in an outdoor setting, with a news anchor in a suit on the right side of the frame. A BFM TV logo and a mute icon are overlaid on the top left of the video. Below the video frame, there is a news ticker with the following text: **FRÉDÉRIC SIMOTTEL** Journaliste High Tech BFM TV. **CHINE : ROBOTS INFIRMIERS DANS LES HÔPITAUX**. **ALERTE INFO** - Coronavirus/entreprises : "Le recours à l'activité partielle, le chômage partiel, est possible" (M. Pénicaud, ministre du Travail). **MIDI 15H**. To the right of the main video player, there is a vertical sidebar titled "Les dernières" (The latest) which contains several smaller video thumbnails with their respective durations (e.g., 02:36, 02:53, 02:27). At the bottom of the browser window, the Windows taskbar is visible, showing the search bar with the text "Taper ici pour rechercher" and several application icons.



Thank you for your attention!

