Human walking problem “solved” up to a greater extent, best till now!

https://www.youtube.com/watch?v=rVlhMGQqDkY

Unsettling because this robot has anthropomorphic features yet is completely asocial, which might be useful in such a scenario.
Analysis of ATLAS along axes of design cross (inspired by Aristotle)

GAIA (impact for the “universe”)
- Power relationship
- Lack of empathy and trust

INTERACTION
- Reliability
- Associality
- Non-human behavior

MATERIAL
- Humanoid

TOPOS (purpose)
- Hiring
Artificial Intelligence: Popular views

The Merriam Webster's Collegiate Dictionary gives us the following two definitions for AI:

1: the capability of a machine to imitate intelligent human behavior

2: a branch of computer science dealing with the simulation of intelligent behavior in computers

"Suppose the volume of Lake Michigan is the same as human brain’s capacity and it’s 1940 and the lake has (somehow) been emptied. Your job is to fill it up using the following rule: To start off, you can add one fluid ounce of water to the lake bed. Eighteen months later, you can add two. In another 18 months, you can add four ounces. And so on... By 2025 you’re done." → There is a fundamental flaw in this popular reasoning! This is not how AI works.

Singularity in AI?

http://www.motherjones.com/media/2013/05/robots-artificial-intelligence-jobs-automation
2045 Project Avatar

“2045 project aims to create technologies enabling the transfer of an individual’s personality to a more advanced non-biological carrier, and extending life, including to the point of immortality.”

http://2045.com/ideology/
Encoding morality in robots?

As militaries around the world invest billions in robotic weapons, no fundamental barriers lie ahead to building machines that "can outperform human soldiers in the battlefield from an ethical perspective," says Ronald Arkin.

Add a variable “guilt” in Robots?

With a decay function and threshold value

If guilt > threshold: do not fire weapon.
Robots and unemployment

Robots should be used in positions better suited to robots.

DDD (Dirty, Dull, Dangerous) jobs

But not always the case! Vast majority of population uses their hand to perform their jobs.

“People are designed to use their minds.”

- John Dulchinos, Adept

Questionable!

http://www.adept.com/
Robots and unemployment (ctd’)

Initiated to change the face of the work force in Guangdong Province

Many chinese companies now struggle to hire enough workers, hence pay has more than quintupled in the last decade, upto more than $500 a month in coastal provinces.

Aims towards economic reforms of the country, aiming to double per capita income by 2020 from 2016 levels, with at least 6.5 % annual growth.

Good response in obtained from chinese companies and the government by designing and installing large number of robots.

Workers are scarce partly because of the government’s “one child” policy and the rapid expansion of the university system

What if turning human employees into robots cheaper??

Amazon tags its employees with personal satellite navigation computers that tell them the route they must travel to pick or shelve orders. However, it also sets a target time for each task and then measures whether targets are met. All this information is available to management in real time. If someone falls behind the expected designated time or is found guilty of other types of “time theft”, the employee is often disciplined or fired.

Suggested book: Mindless: Smarter Machines are Making Dumber Humans (Simon Head)

https://prezi.com/vw7ftgxcqgyv/capitalism-ethics-and-equality/
http://quietmike.org/2014/06/06/evil-empire-amazon/
Theories of Digital Marketing

Marketing theorists use a scientific approach to explain consumers' purchasing attitudes and behaviors. Companies use this information to guide their decisions in how best to communicate their products' value to consumers. Digital marketing poses challenges in this regard, because its channels are relatively new and they're still evolving. It's necessary to apply theories to digital marketing that acknowledge both its similarities to traditional, analog channels and its differences.

http://smallbusiness.chron.com/theories-digital-marketing-36397.html
Artificial Intelligence: The positive side!

Robots that interact with humans for a better society

- Social robots and embodied interaction
- Robot companions
- Hybrid human-robot systems
- Agency and shared autonomy
Where the Action Is: The Foundations of Embodied Interaction

The philosophical bases of human-computer interaction. The author looks at how what he calls "embodied interaction" -- an approach to interacting with software systems that emphasizes skilled, engaged practice rather than disembodied rationality

**Tangible** affordances

Marble Answering Machine

The Marble Answering Machine (by Durell Bishop, student at the Royal College of Art) is a prototype telephone answering machine. Incoming voice messages are represented by marbles, the user can grasp and then drop to play the message or dial the caller automatically. It shows that computing doesn’t have to take place at a desk, but it can be integrated into everyday objects. The Marble Answering Machine demonstrates the great potential of making digital information graspable.

https://interactionthesis.wordpress.com/2007/02/01/marble-answering-machine/
Social Mobile robots: a new species of machines

Static social robots are “animate but sessile” → mobility is an important factor at several levels

- Not like standard computers

  They are independent agents

  They are real

- Not like standard physical artifacts. Can be of irregular or custom made shape

“Uncertainty, randomness, free will or independence are so strikingly absent in well designed machines.”

- William Grey Walter, Famous British Robotician
Hybrid human-robot systems: 3rd Arm Robotic Drumming

- [https://www.youtube.com/watch?v=fKryPingtww](https://www.youtube.com/watch?v=fKryPingtww)
- Built by Georgia Institute of Technology researchers
- Has built a wearable robotic limb that allows drummers to play with three arms.
- The two-foot long “smart arm” can be attached to a musician’s shoulder.
- It responds to music it hears. When the drummer moves to play the high hat cymbal, for example, the robotic arm maneuvers to play the ride cymbal. When the drummer switches to the snare, the mechanical arm shifts to the tom.

An example of the agency of the robot extending the human’s agency

Also, neuro-muscularly controllable artificial limbs and exoskeletons
Guidelines for designing better HRI

- Authenticity (no noses than don’t smell, or eyes that don’t see …)

- Diversity (balance between manual and mental work, e.g. craft movement, etc.)

- Freedom (dabger from manipulatability of people by individuals in power, universal remote control)

- Impact (where society is going)
On “impact”

CREATE LAB (http://www.cmucreatelab.org/)’s vision: Empowering people. Make people technologically and data fluent and help them make arguments (advocacy) to defend an idea with that technology.

Examples:
- Monitoring air quality → closing down highly polluting plant.

http://www.cippgh.org/about-us/