

ROBOY

AVATAR
Munich Team Info



ROBOY 3.0

RAFAEL
HOSTETTLER

ONE VISIONARY, ONE VISION

"Build robots as good as the human body, so eventually we can become these robots – as a way to live indefinitely. A simple, but powerful moonshot vision. Formulated in 2014 and maintained continuously and rigorously. Ultimately, all my doings converge into a single thing: to stay curious forever."



Bsc. Thesis, Msc. Thesis



MSc. CSE ETHZ

PhD Student
Founder of Think. Make. Start.



**WE NEED YOU,
TO WIN A
UNIQUE PRIZE:**



ANA AVATAR XPRIZE

THE LARGEST **ROBOTICS**
COMPETITION IN THE WORLD



XPRIZE
AVATAR

ANA



10 MIO USD PRIZE PURSE

Funded by the airline ANA, this prize is about the future of **transportation**.



THE BEST COMPETE

The worlds best robots compete in this prize.
77 teams are left, **only 2 German speaking**.

The prize is won by the team that best **teleports** the presence of a person into a far away robot: When you move the robot moves the same way, and you see what the robot sees, hear what it hears and feel what it feels, as if you were the robot.



ROBOT

the robot moves as you **move**

YOU

REMOTE

see what the robot sees**hear** what the robot hears

WHY TRAVEL WHEN YOU CAN TELEPORT?

feel what the robot feelsREMOTE
VISITS

CARE



Ridesharing

1h through the city



disrupted by Autonomous Cars

1h through the city,
but relaxed



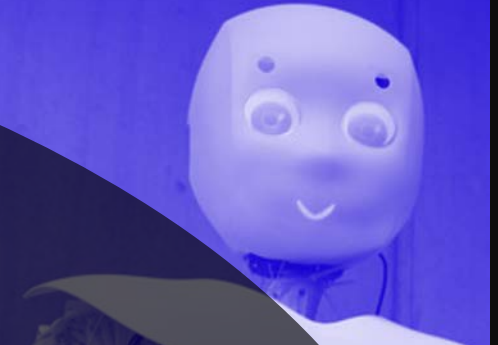
disrupted by Flying Taxis

20 min through the city
& relaxed



disrupted by Telepresence

1s through the city
or anywhere.



“Telepresence is the ultimate instant travel technology
that will disrupt current & upcoming technologies.”

Peter Diamandis, Founder of Singularity University

DISRUPT THE DISRUPTORS



HALODI (Norway)

Purpose: For Consumars and Industry. In Every Houshold.

Background: holistic approach to automating human labour

HUBO (Korea)

Purpose: N/A

Background: Private Research Facility



Valkyrie (USA)

Purpose: Create a robotic astronaut

Background: NASA's own robot for the Space Robotics Challenge



ATLAS (USA)

Purpose: Create high performance Robots

Background: US Military Funded -> Google -> Sofbank



HRP-5P (Japan)

Purpose: autonomous performance of heavy labor or work in hazardous environements

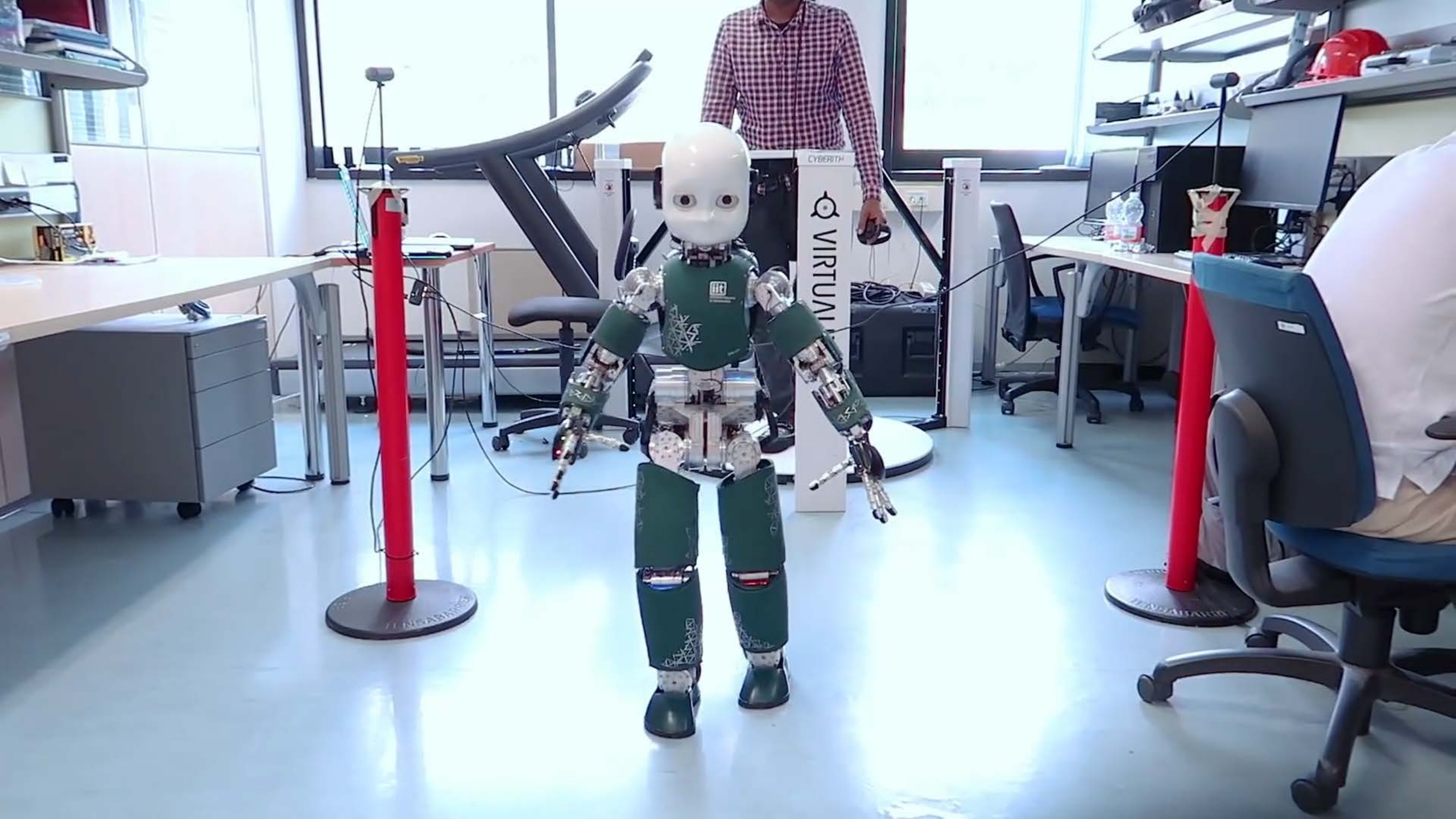
Background: serveral private sector companies

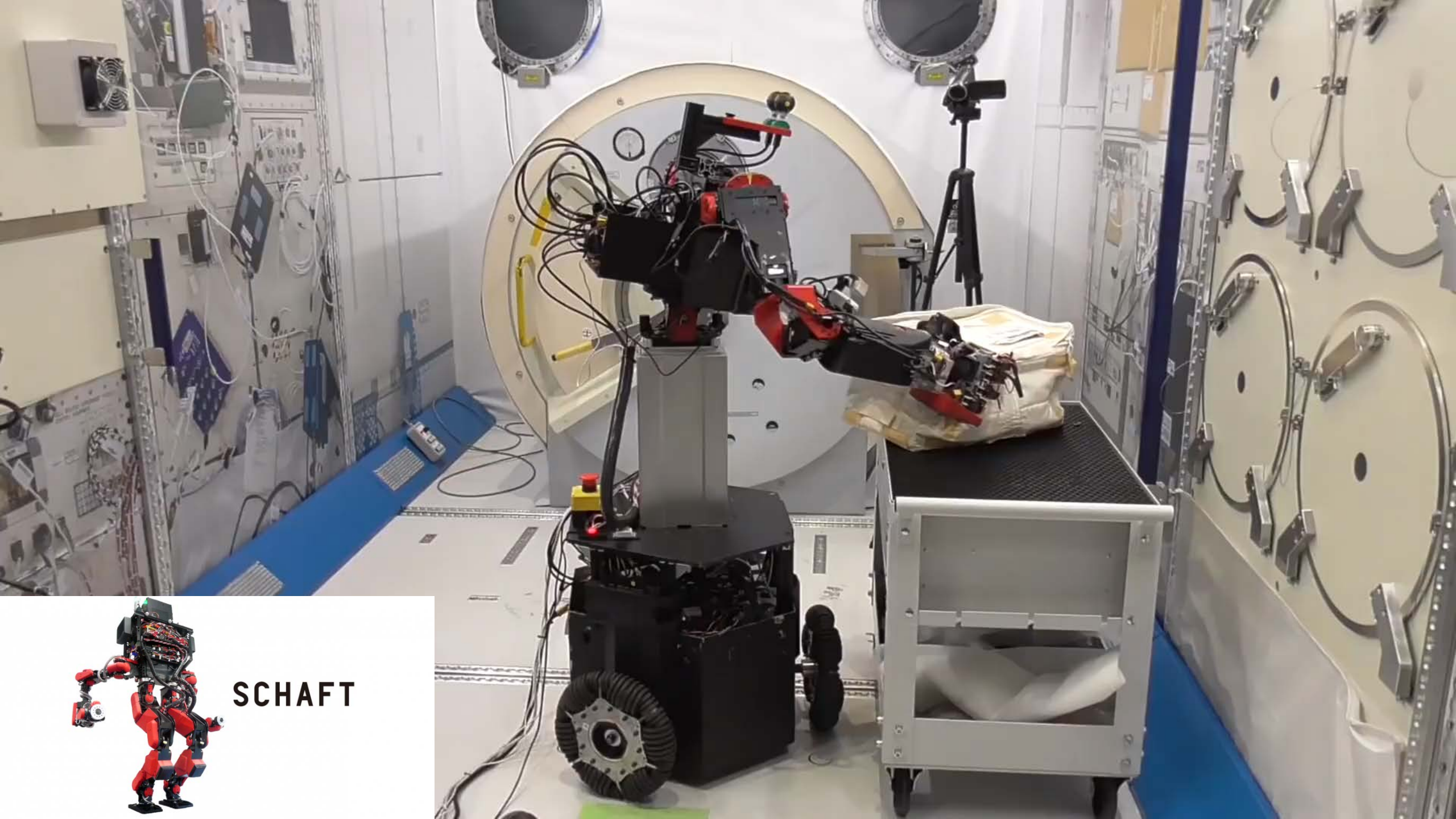


OUR COMPETITORS

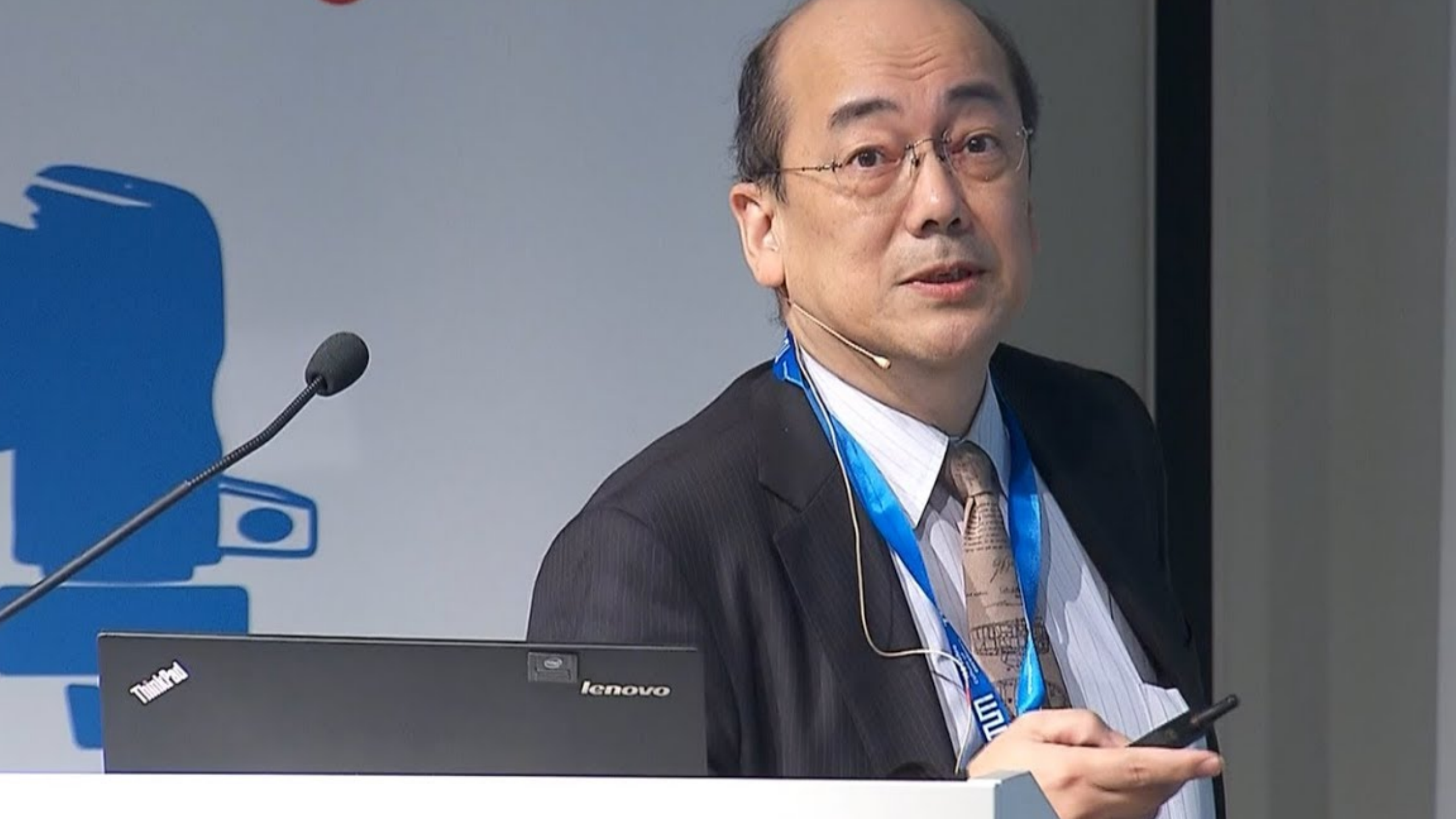
All those robots you've seen on Youtube are there and compete. And we're among them – showing that we build the **most natural and most human** robots.



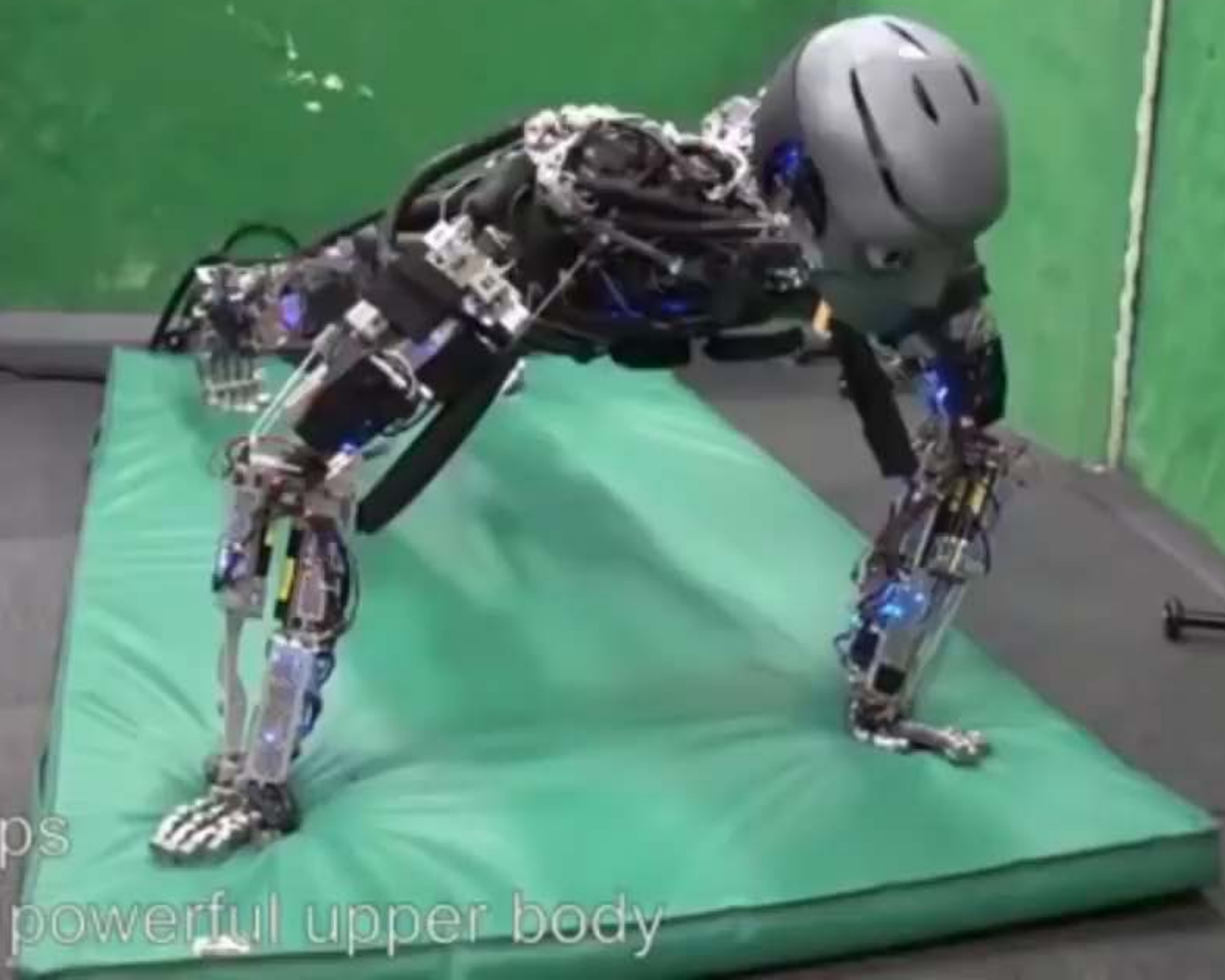




SCHAFT



Source: AAAS



Push-ups
with its powerful upper body



WHY ROBOY IS UNIQUE

- **Completely musculoskeletal** – the robot has muscles and tendons like humans do!
- **Compliant & safe** – interacting with the robot is completely safe, because he's soft like a human
- **Friendly dynamic face** – loved by millions for obvious reasons, simply friendly & cute
- **Developed in house from scratch** – we have full control over all aspects of the system design



ABOUT ROBOY

A white humanoid robot, the Roboy, is shown on the left side of the slide. It has a white, rounded head with two small black dots for eyes and a blue circular sensor. Its body is white with visible internal wiring and mechanical components. It is holding a green apple in its right hand. The robot is standing on a white pedestal.

FOUNDED IN 2013

THE BEGINNING

Roboy was founded at the AILab at University of Zurich in 2013 with the goal of building a robot that would imitate the human body – with its muscles and tendons.

The culmination of the successful career of Prof. Dr. Rolf Pfeifer. And then Rafael adopted him and brought it TUM to develop it into something new altogether.



2017 – MODULES

2018 – A HUMANOID

3/2019 - RICKSHAW

9/2019 – ICE CREAM

FROM DEVELOPMENT...

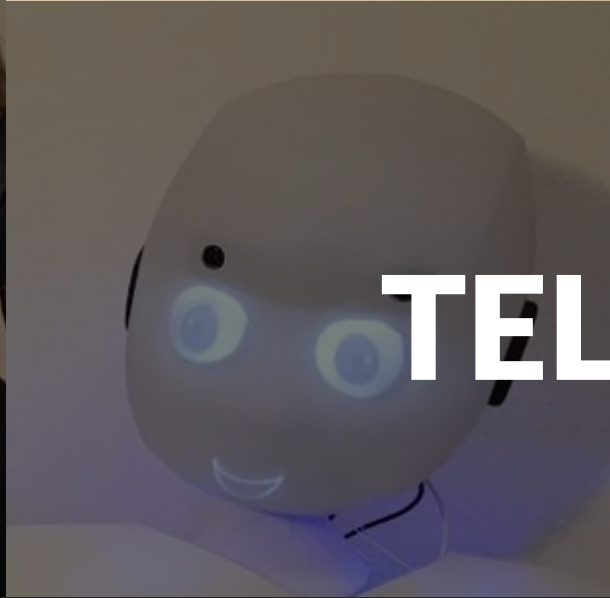
From one-off system to modular humanoid tendon driven robot that can drive a rikscha and service ice cream.



02/2020



06/2020



...TO TELEPRESENCE

In 2020 a whole new Roboy saw the light of day. Roboy 3.0 is not only a dramatical technical improvement over Roboy 2.0, it is also the first musculoskeletal telepresence system.

KAT WALK MINI

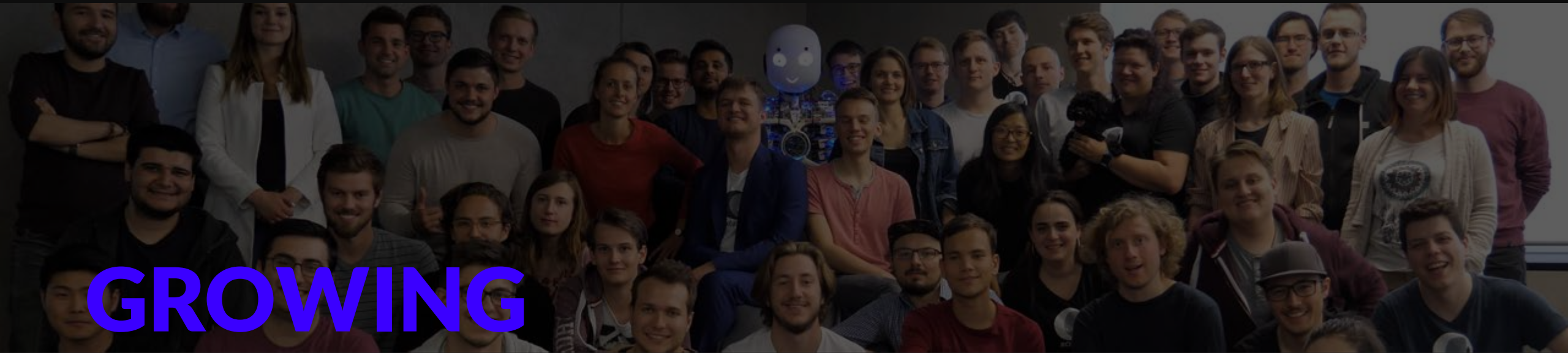


ROBOYAVATAR









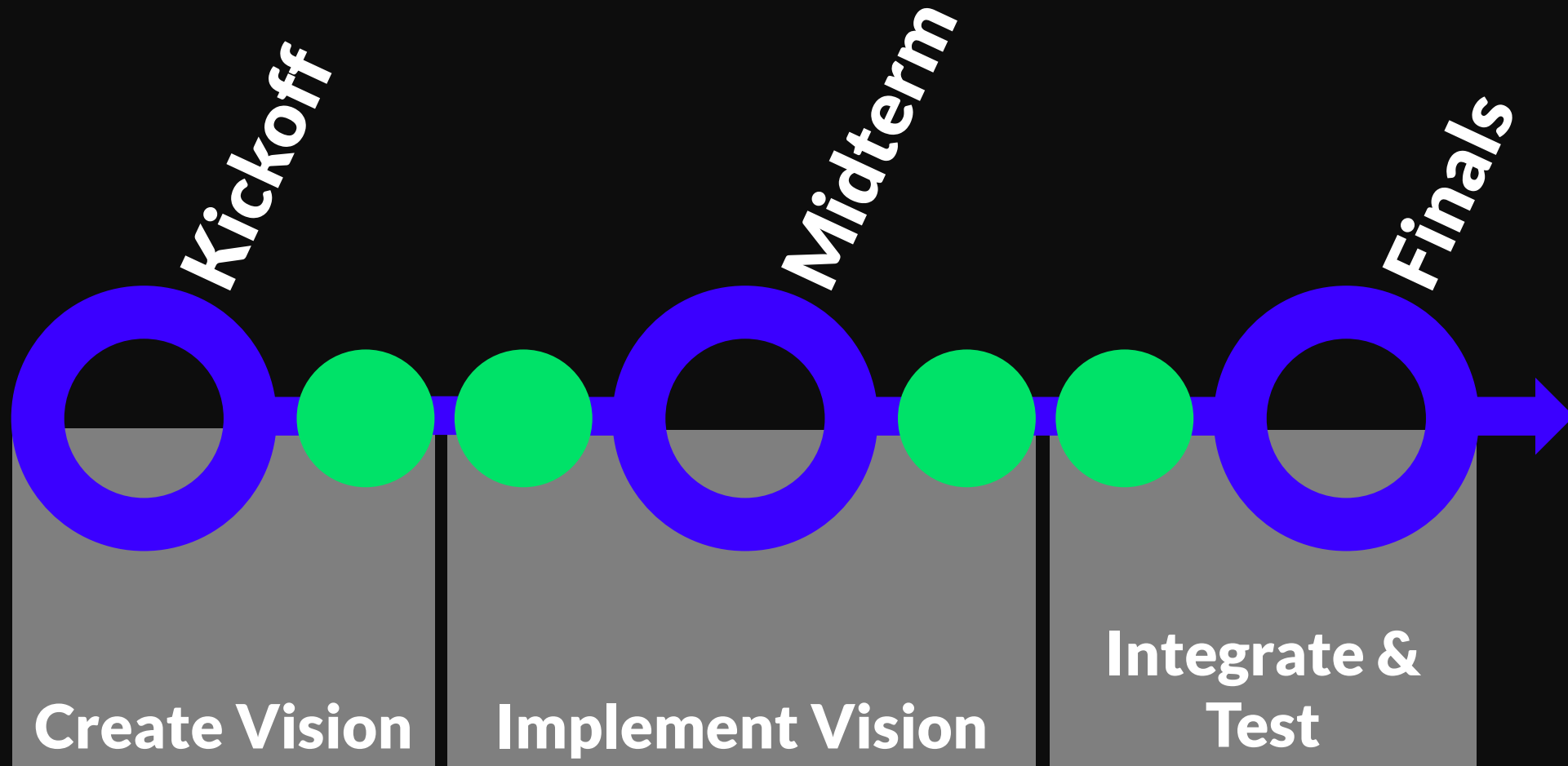
GROWING THE TALENT

Robots are not built by a single person – they require huge and diverse teams. Which is why Roboy is built by a dedicated full-time interdisciplinary core team, supported by mechanical and electrical engineers, computer scientists, AI and robotics masters and many more. Simply the best Europe has to offer.

Technische
Universität
München

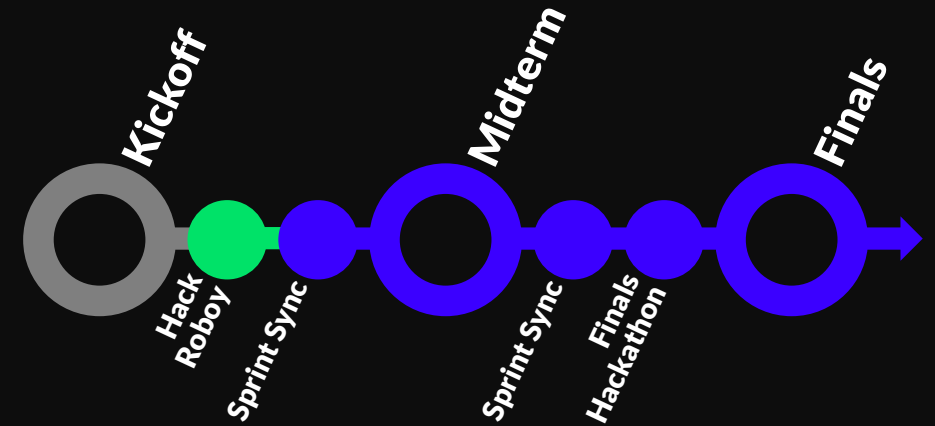


ORGANISATION



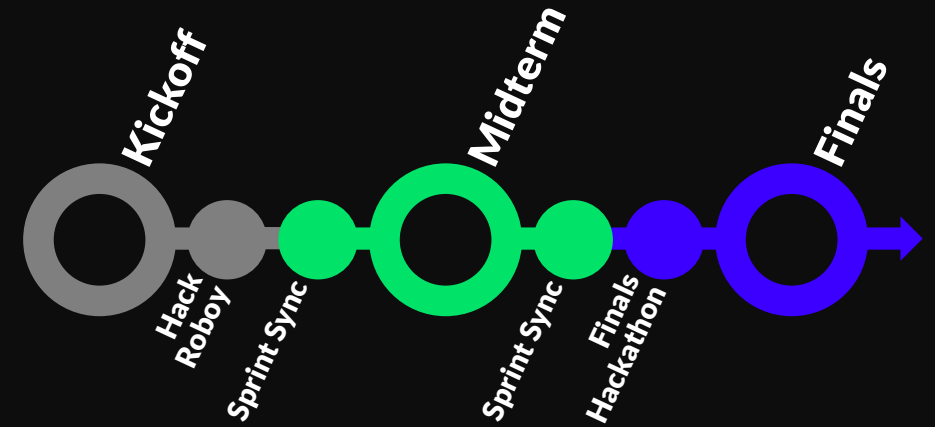
LEARN

- **Input:** Group of Individuals & Topic
- **Function:** Read on Topic, learn to use tools, become a team, fall in love with the opportunity
- **Output:**
 - Vision Video
 - Validation Plan
 - Interface Description
 - Epics
 - Trained & motivated Team
 - First Prototype!

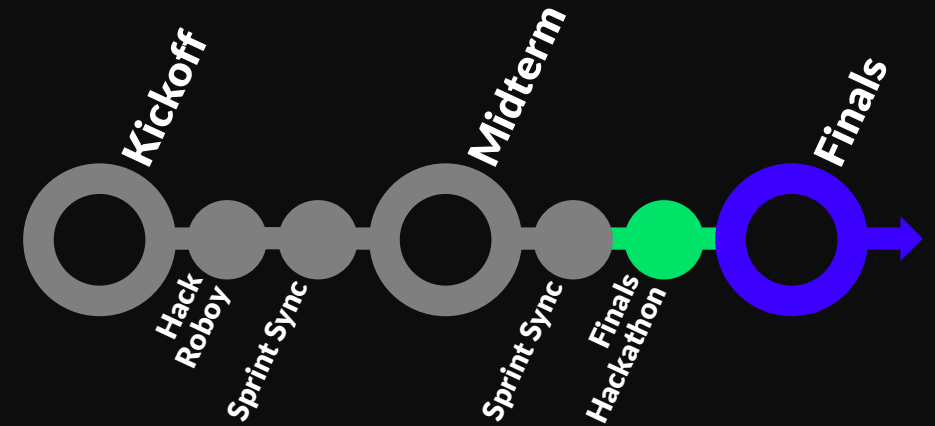


IMPLEMENT

- **Input:** Vision Video, Team, ...
- **Function:** Iteratively develop & implement
- **Output:**
 - Rough standalone prototype
 - With all intended functions



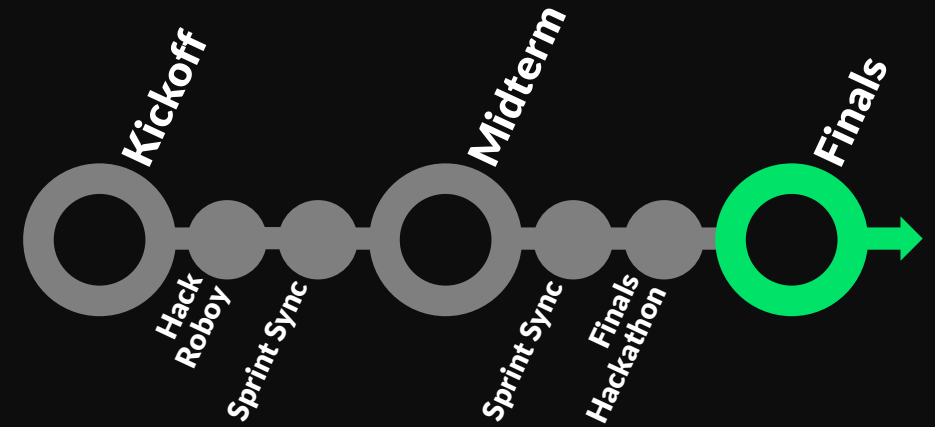
INTEGRATE & VALIDATE



- **Input:** Prototype
- **Function:** Integrate with Roboy & Polish, Validate against your validation plan
- **Output:**
 - Validation report
 - Integrated and polished product

FINALS

- Full day! - 11 – 21h
- Invited Speakers from Robotics
- Partners
- Friends



ORGANISATION



Work

40+ hours/week



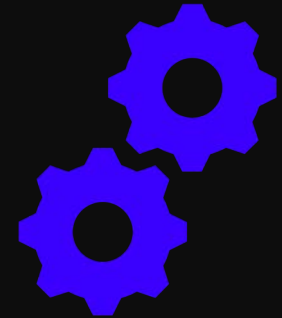
Team Meeting

weekly



Sprints

2-3 weeks



Angel & Raf Meeting

on request

MORE THAN JUST TECH

Positions

- Team Orga
- Marketing
- Sales / Key Account Management
- Art & Design Orga
- Roboy & Lucy
- Writing Proposals



WE'RE SUPPORTED BY:

LARGE CORPORATES

Partnerships, prototypes & workshops

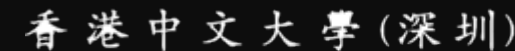


INCUBATORS & ACCELERATORS



RESEARCH INSTITUTES & CENTERS

Robotics products & collaborations



The Chinese University of Hong Kong, Shenzhen





THIS IS YOUR CHANCE TO BE PART OF THIS UNIQUE ENDEADVOUR.

TAKE IT. BE BOLD. JOIN US AND WIN WITH US: WIN@ROBOY.ORG

**LET'S WIN
TOGETHER**

**LET'S SHAPE
THE FUTURE**