

Furhat Robotics



The World's Most
Sociable Robots

Hi, My Name Is Furhat!

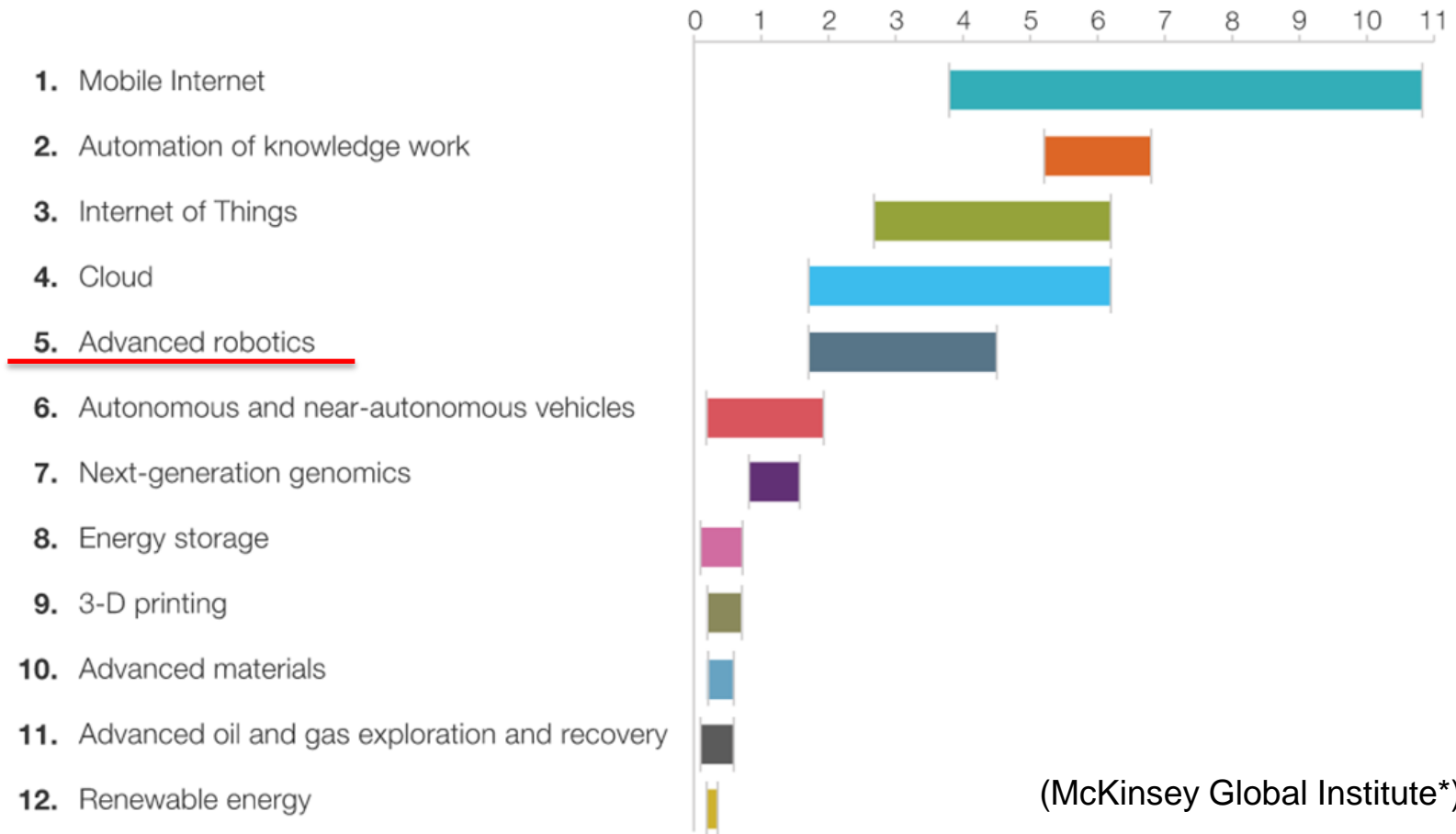
- Video too large, can be found on our website* www.furhatrobotics.com

(*soon...)

Disruptive technologies...

Advances that will transform life, business, and the global economy

Estimated potential economic impact of technologies across sized applications in 2025, \$ trillion, annual



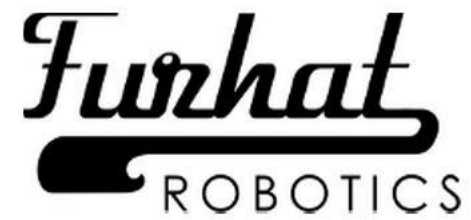
(McKinsey Global Institute*)

Personal Robotics

- We are witnessing the beginning of a revolution..
 - Not the robots that build your cars
 - Not the robots that will drive them

Personal Robotics

- Companions that spend time and interact in close proximity with humans.
 - They need to:
 - Talk and understand human language.
 - See, and understand the environment around them.
 - Understand human activities, intentions, emotions, personality, and ways of communication.



Is at the core of the research and development demanded by this vision.

Under The Hood...

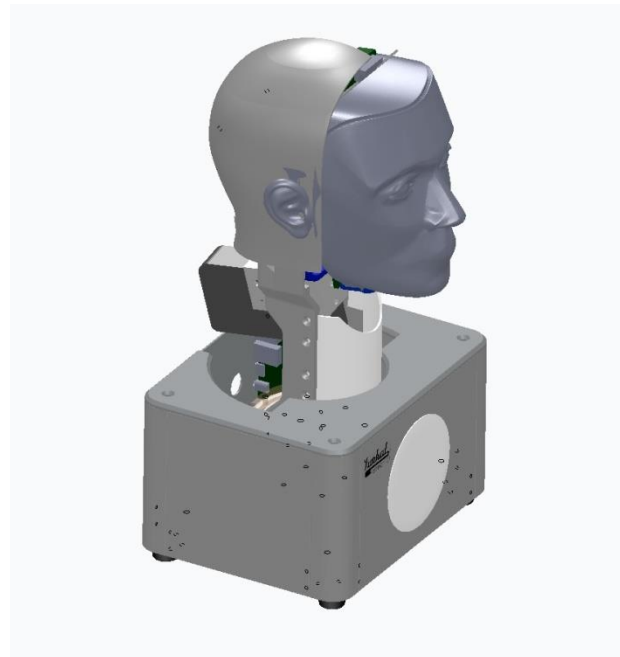
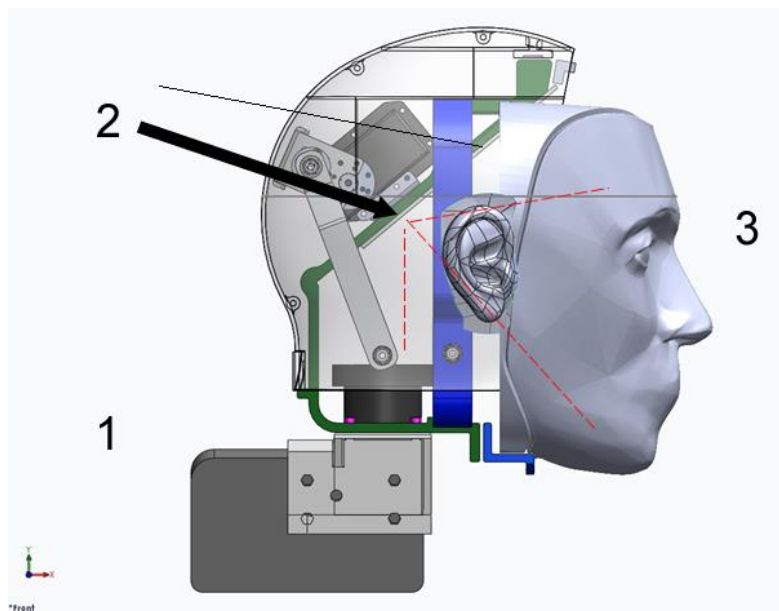
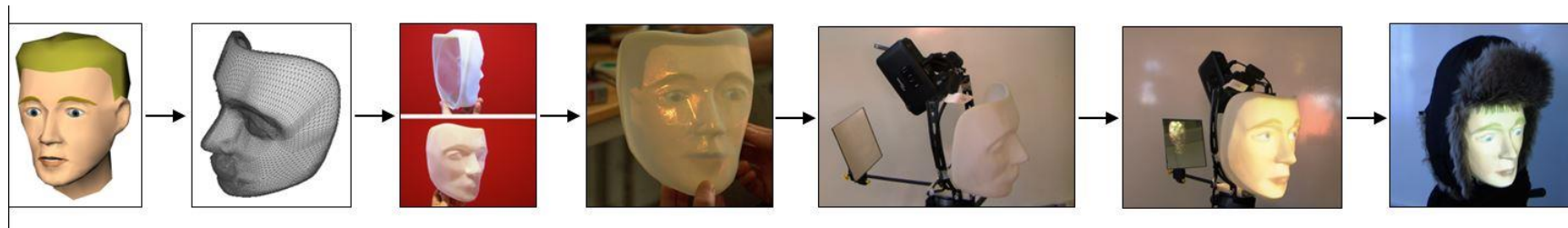
- Hardware

- Mask, Mirror, Projector, Servos, PC...

- Software

- irisTK, 3D animation, Lip-sync...

Hardware



Benefits compared to a mechatronic solution:

- High resolution facial animation
- Low maintenance
- Customizable
- Expressive
- Inexpensive
- Low weight
- Quiet

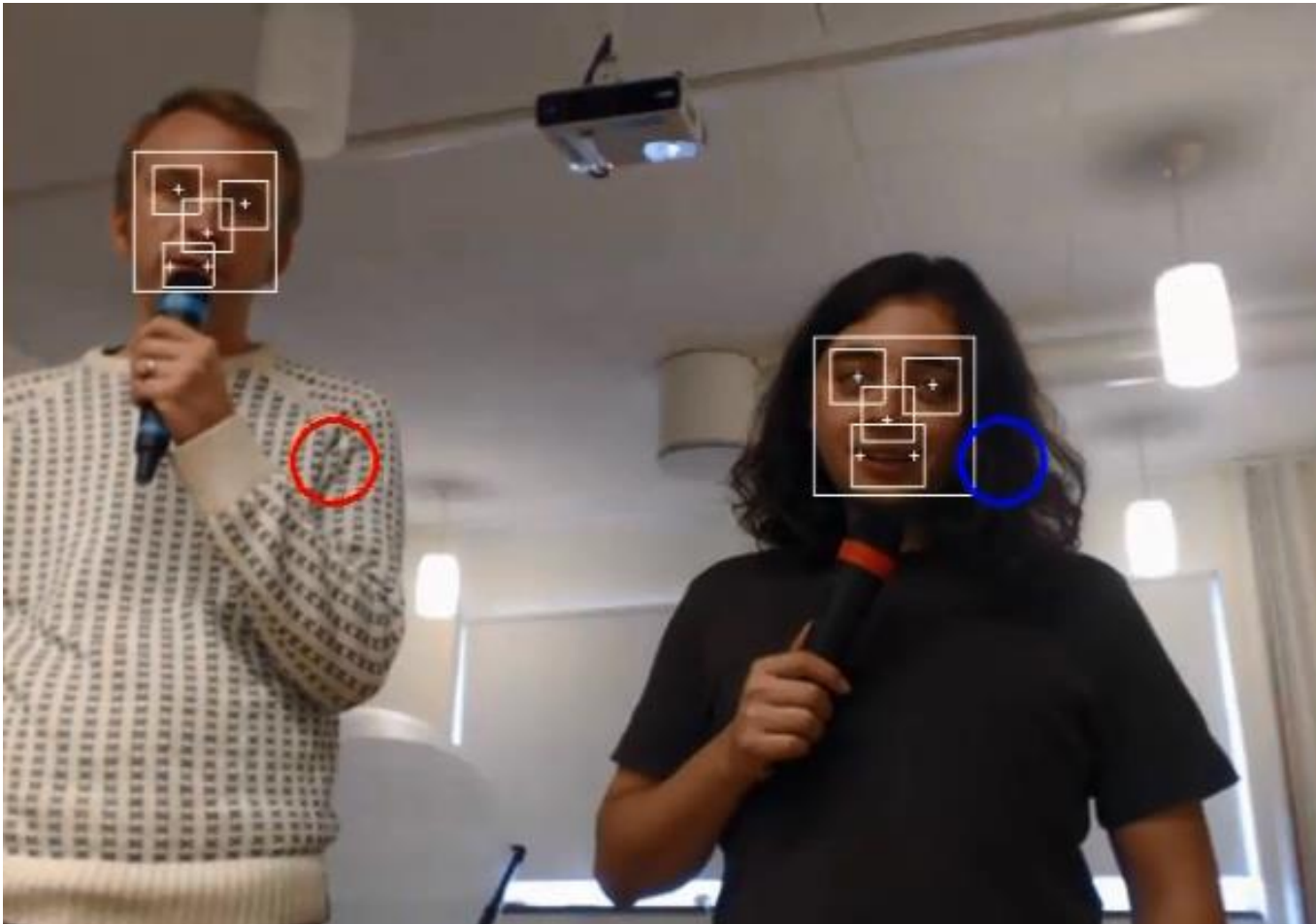


Software - IrisTK

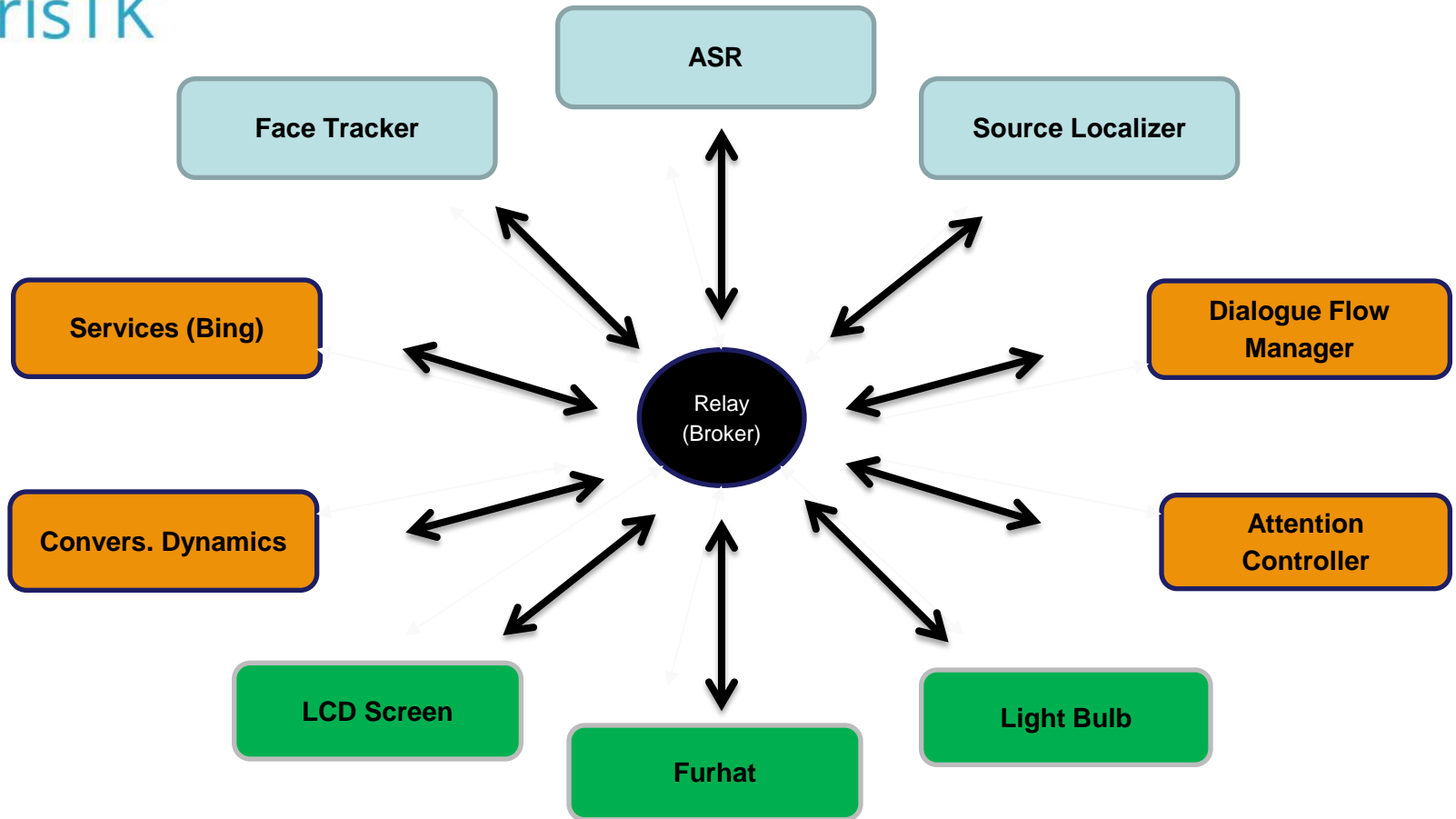
The screenshot displays the IrisTK software interface, which is divided into several panels:

- Situation Top:** A large grid-based area showing a situation. A green triangle is positioned at the bottom center, with a red dot at its apex. A red line connects the red dot to a blue dot labeled "system attending: nobody" at the top. Below the triangle, a blue dot labeled "agent-1 attending: unknown" is connected to the triangle's base by a red line. A blue line labeled "direct" points from the "agent-1" area towards the "system" area.
- Kinect Color:** A video feed showing a person sitting at a desk. Three red circles are overlaid on the video: one on the person's face, one on their hand near the laptop, and one on the laptop itself.
- Event Monitor:** A timeline view showing the sequence of events across different modules. The modules listed are SituationModule, SituatedDialog, CereVoiceSynthe, FaceModule, KinectModule, and KinectRecognize. The FaceModule track shows a long purple bar representing a speech utterance: "You're a great guy, you are always welcome over to my place." The KinectModule track shows a series of blue vertical bars representing sensor data.

Fraunhofer SHORE/Microsoft Kinect



- Event-based
 - Distributed
 - Broker (relays events to connected systems)
- Modules
 - manage input (such as speech recognition)
 - output (such as speech synthesis)
 - control (mapping input to output).
- Packages
 - Core package, Addons (reusable), Applications (App)
- FlowModules
 - XML-based statechart orchestrates the interaction



- App-store?

Social personal robotics has to

- create and invest into nonexistent markets.
 - Classrooms and homes - kids for education
 - Shopping malls, giving guidance
 - Marketing and advertisement
 - Hospitals and health care
 - Entertainment parks
 - Waiting rooms
 - At the bus station, and the airport
 -

Thank You
For Your Attention!