

Cart 360: Function Fear()

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Project Description

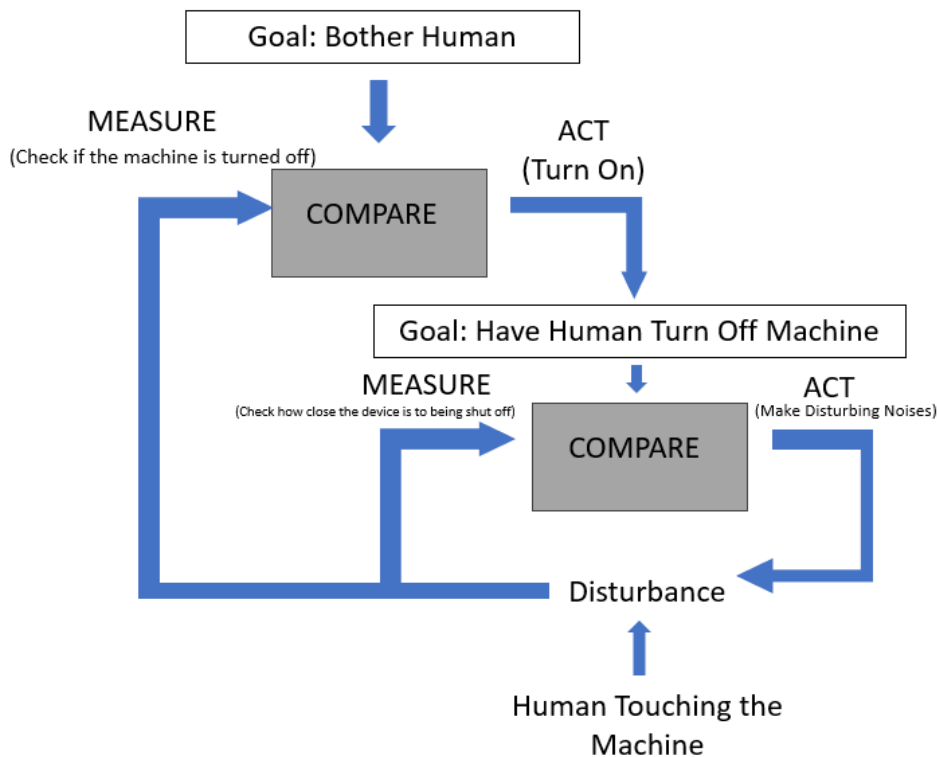
Function Fear() is a project that intervenes with the notion of a machine built for human interaction. It is a machine that users will have to turn off in a convoluted process, disturbing the user along the way as it will emote its feelings throughout the process. To prevent the artifact from simply being an object of surprise, we will have it act up every so often, forcing the user to constantly interact with it to quell it. The user will have to balance between interacting with it and not being dissuaded from continuing to interact with it after a negative interaction has arisen. The artifact is meant to reposition the user as the object of interaction and make it fear the possibility of interaction after a bad interaction has been experienced with a person. The project is made for an empathetic response from people to create a new response to how we interact with machines and semi-sentient beings. The goal of the project is to have a user feel for a device, and treat it more than the sum of its inanimate parts. More specifically, it will provide a unique method of treating a device. While this is a project that is meant to be challenging towards users, its goal is still to empower those who interact with it. Users are used to having positive memories with devices that mimic life (iDog, Anki Cozmo, etc.), and as such, are used to projecting a default state of positive emotions onto similar devices. By experiencing something that flips this idea (of a default positive state) on its head, it forces designers to consider leveraging non-traditional models of emotions in regards to design. In addition, it allows users and designers alike to reflect on what makes a device appear “happy”, or “sad”. The environment we want to intervene in is the preconceived safe space where a machine might be taken at face value for being wholly dependent or shackled to for human interaction. Ideally the project would be presented in a semi sterile space such as a gallery to give off the impression that humans are interfering with its “natural” state

Evaluation of Sensors

- Accelerometer
 - Allows the device to sense being rotated, picked up, put down, and more. This is pivotal in designing a device that responds to a user handling it, as one of the key interactions a user has with a device is picking it up. It is then necessary that the object knows how to respond to this interaction electronically.
- Force Pressure Sensor
 - Allows the device to recognize being squeezed and pressed upon. This affords the device to be toyed with in a playful way, and able to provide a response to such.
- Person Sensor by Useful Sensors

- Allows the device to recognize faces with a camera. This affords the device to detect who comes into contact with it and respond with a proper warning of proximity.
- Sound Sensor
 - Allows the device to recognize an intensity of vibrations using a diaphragm. Gives the ability for the machine to receive a range of frequencies to directly interact with the speaker.

Interaction Design Strategy Illustration



Three Similar Projects

The useless machine

A useless machine is a box with a switch. Upon flicking the switch on, a mechanical arm is turned on, and pops out from inside the box, turning off the switch, returning the box to the state that it was originally found in. The project is similar in counteracting the idea that a machine is built to be enjoyed when humans act upon it.

Affetto

Affetto is a human-like robotic head, used exclusively for research by Osaka University, that has been in development since 2010 (and has been receiving updates to this day). In February of 2020, a video was posted in which the researchers connected a tactile sensor to Affetto. When the pressure exceeds a threshold, the robot's expression changes into a wincing face. From the description of the YouTube video: "Simply that's it in the robot. Our focus is on how we recognize this situation and treat the robot looks like having the capability of feeling pain".

Ameca

Ameca is a similar project to Affetto. It is a humanoid robot, with the company behind it, Engineered Arts boasting that it is the "world's most advanced human shaped robot representing the forefront of human-robotics technology". Interestingly, Ameca is more of a platform, rather than a full complete package. It's intended to be used as a slate to develop that artificial intelligence developers can use to put their software into context. While demoing Ameca in a video posted to their YouTube channel, a finger was getting close to the robot's face, and when approaching right up to its eyes, Ameca raised its arm to push the person's hand away. Unfortunately, the video does not mention how scripted this moment is, although it does mention use of Tensorflow for tracking the user's fingers.

Response to Projects

Our project shares similar elements from all the aforementioned projects, but none of them quite encapsulate the full breadth of what we plan to do. Ameca rejects the user getting too close, Affetto shows pain, and the useless machine pushes back against being turned on (in our case it would be turning *off*). However none of these projects combine all three. The useless machine, which does let you change the on/off state does just that, but only allows for 100% of power or none at all. Our project would be a slower progression, allowing the user to feel the weight of their impact on a heavier emotional scale. Affetto and Ameca dissuade you from toying with them, but they don't allow you to go further. Again, we would put the user in a position where, sure they are *dissuaded* to not take an action, but not prevent them (even possibly encourage them). In conclusion, these projects are great experiments, but they are either reactive to being turned off but not disturbing, or disturbing but not able to be turned off through user input. We would create a project that is both able to be turned off, while disturbing the user in the process.