

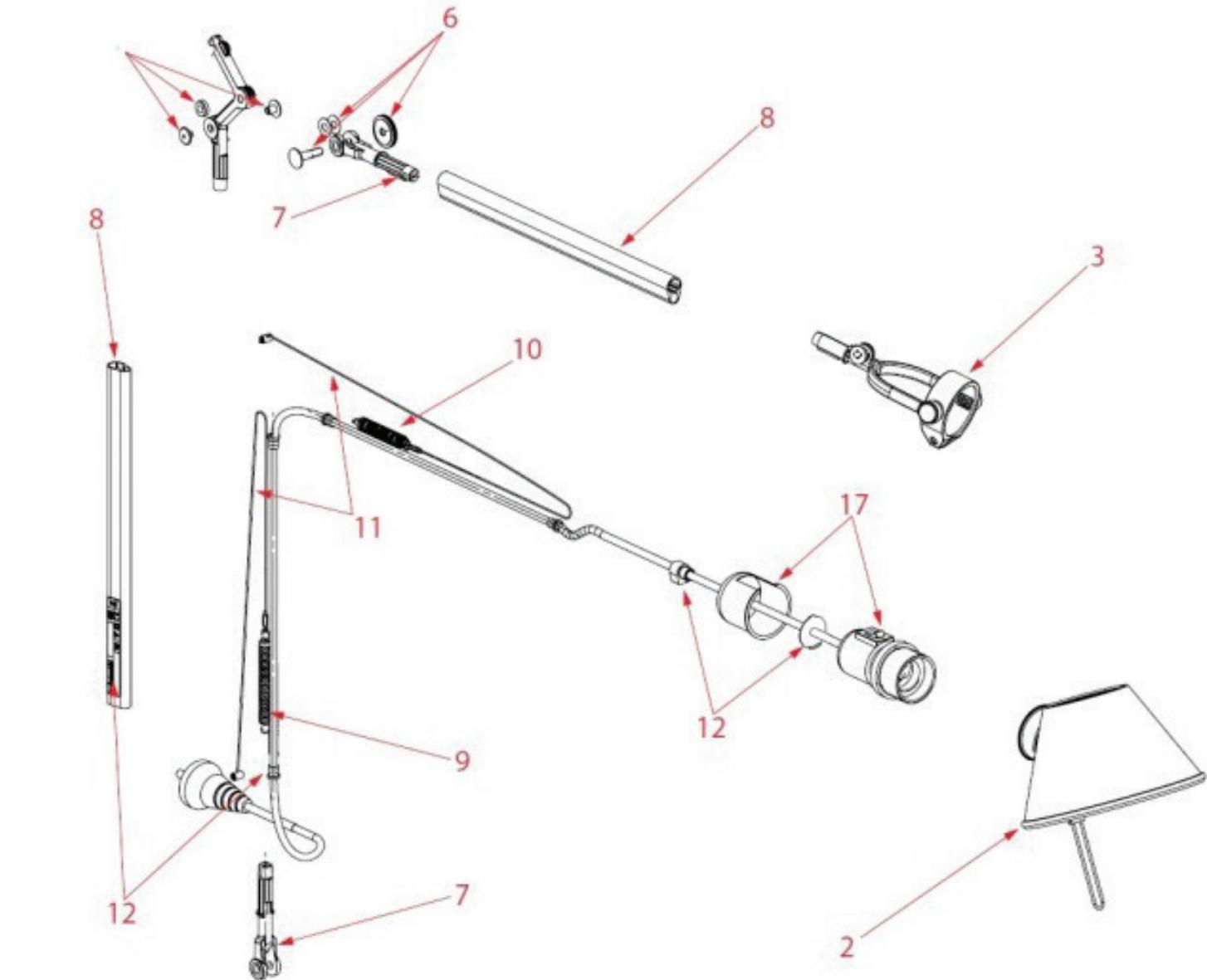
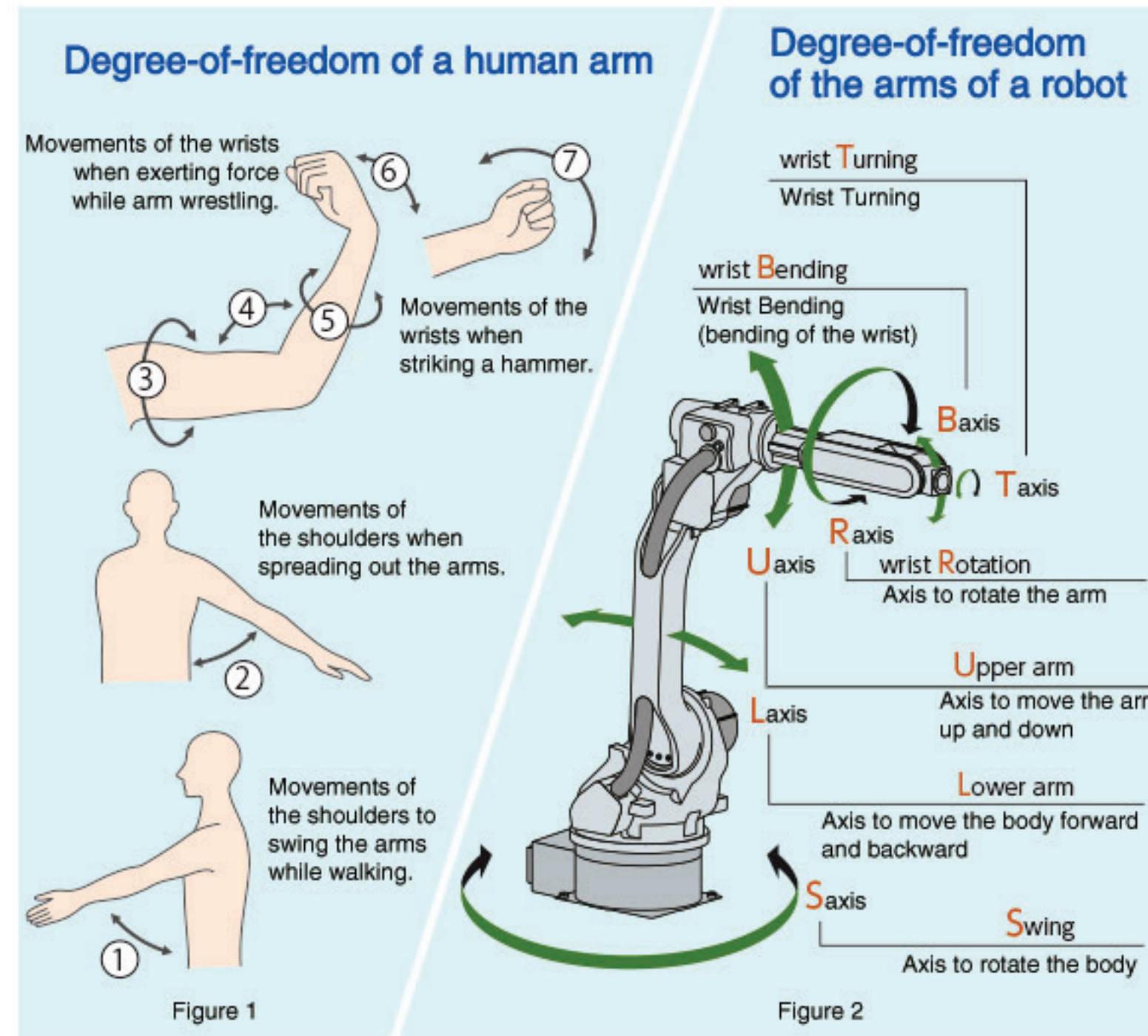
The Companion Lamp

A LIGHT SOURCE THAT OPTIMIZES YOUR VISIBILITY AND MOOD (2020)

How might we add technology seamlessly into daily objects such as a lamp but still maintain our empathy (emotion and sensitivity) toward it.

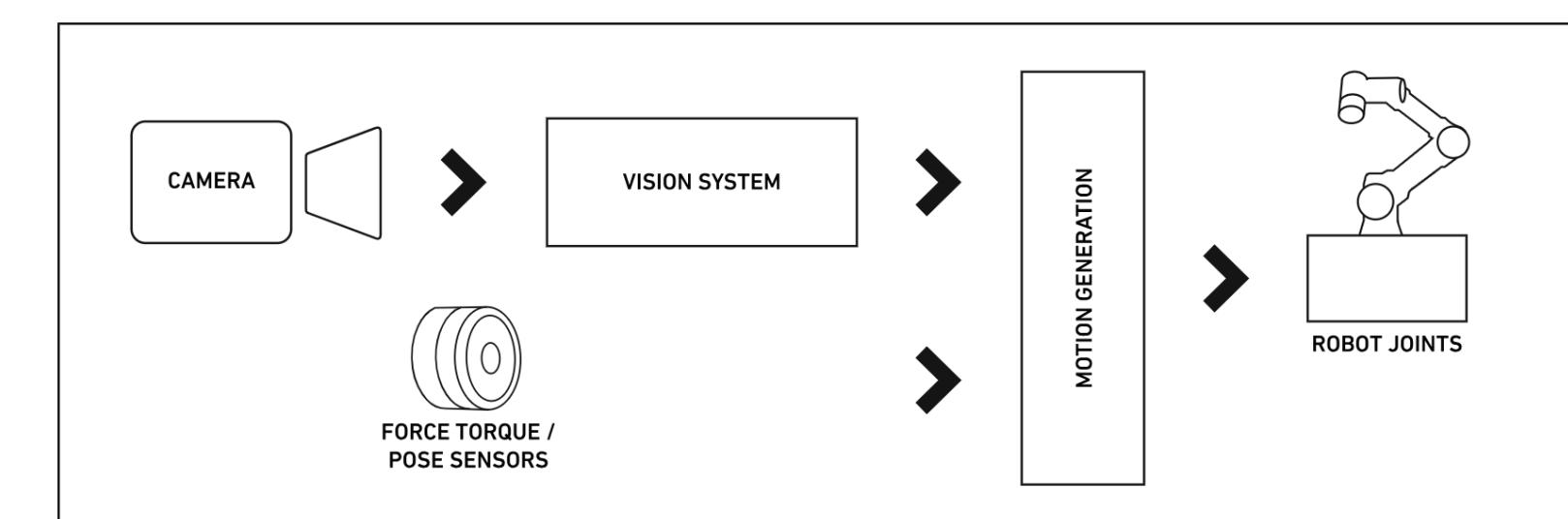
Smart technology has become a misnomer for products that have “intelligence” from inbedded technology. By focusing on how these products can be more adaptive to our life style, beyond just their functions, we can move into a new frontier called sensitive technology.

The Companion Lamp, is a lighting source that becomes familiar with it's users. Much like a cobot, it utilizes machine learning through physical interaction and observation to connect with your physiological and psychological states. Through IOT, it would create it's own awareness of time of day and location to match your circadian rhythms while employing various settings to enhance your mood. The lamp would be able to frame itself around your body to provide optimal lighting conditions for your workflow and by adjusting itself to your position.



Artemide Tolomeo Lamp

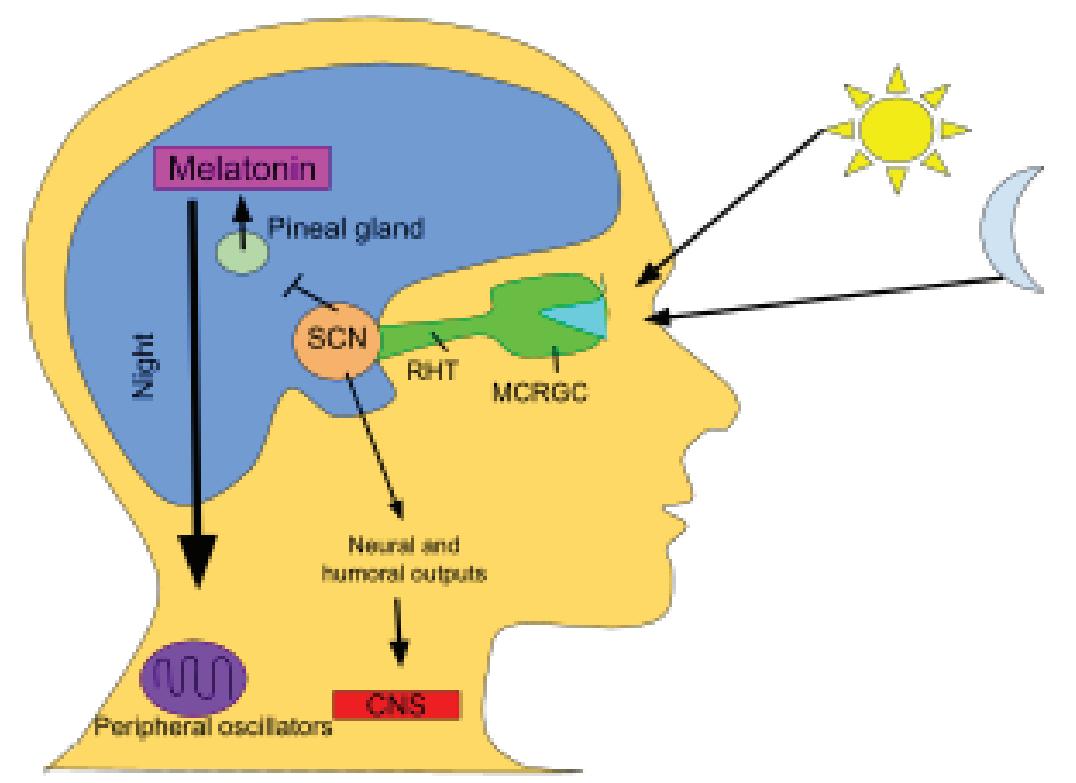
“What is Robot,” yaskawa-global.com



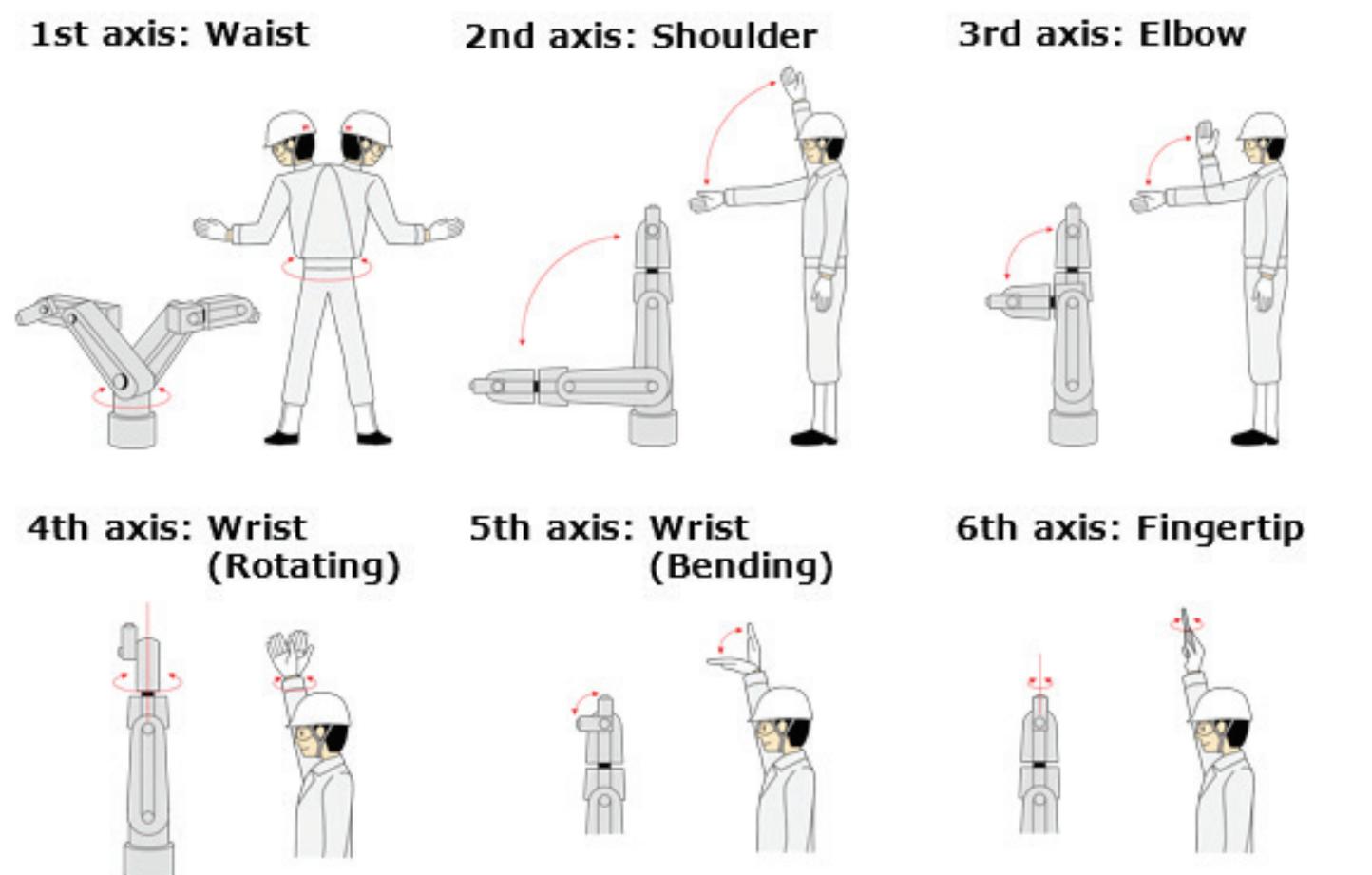
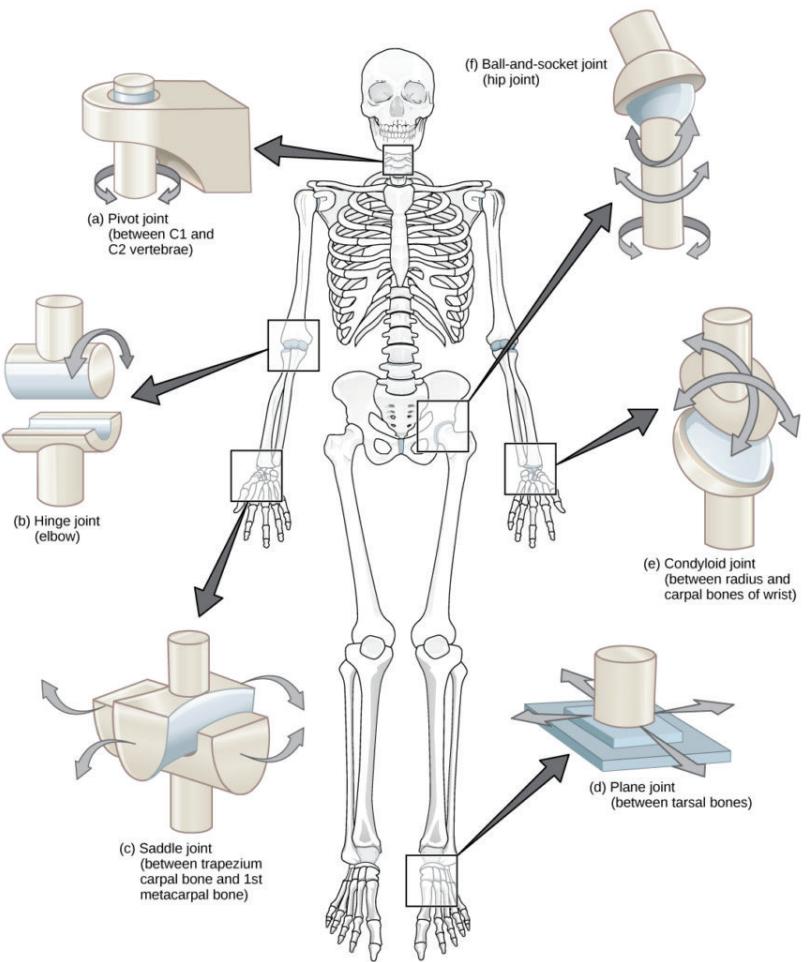
This or That: Open Ended Survey



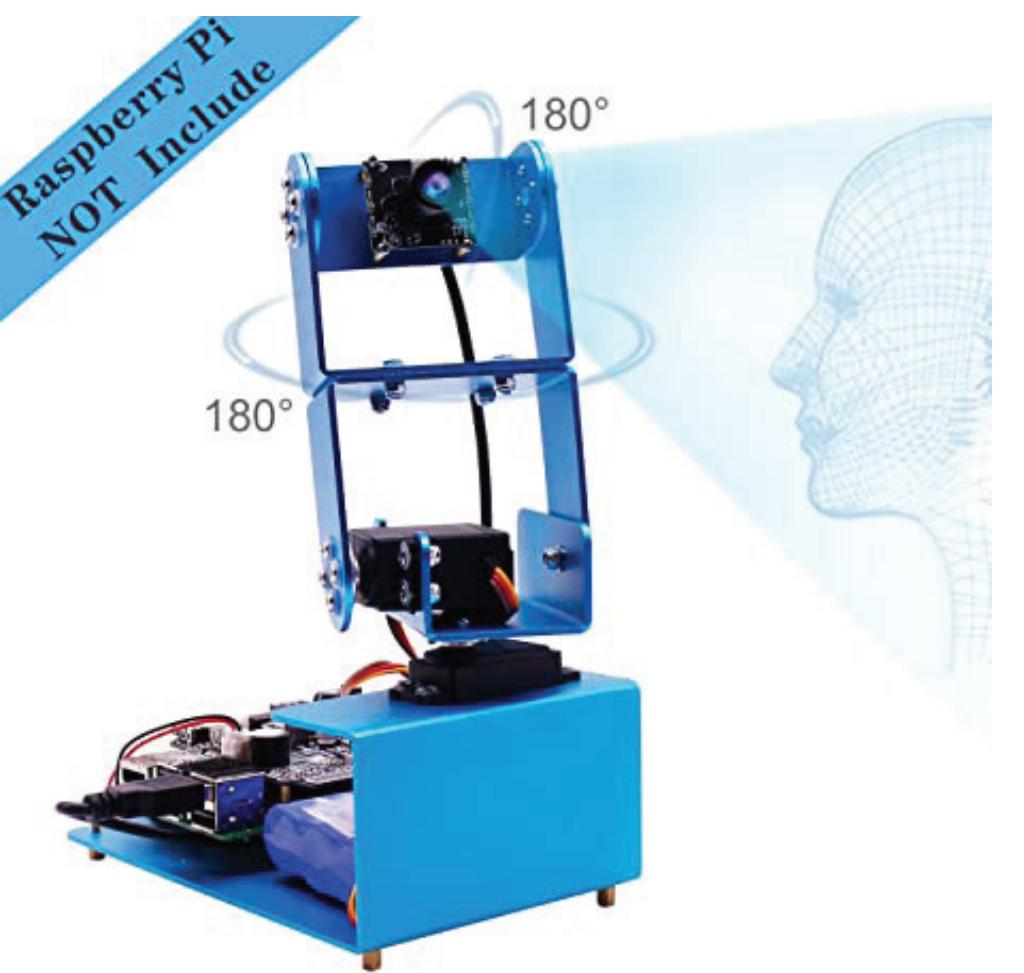
Light Therapy and SAD Lamps



Study in Motion: Series of Joints, Motors and Axis of Rotation/Articulation

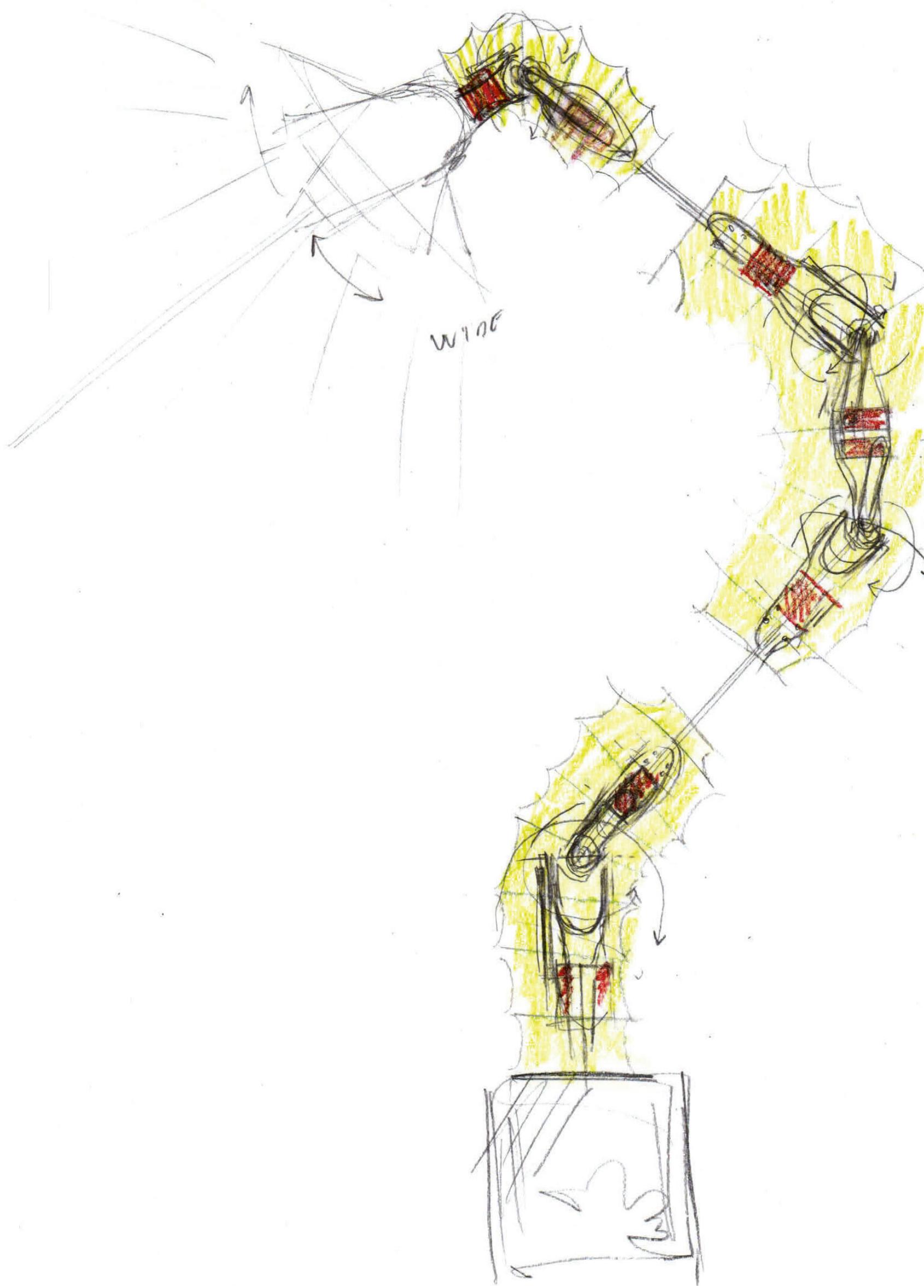


AI Learning

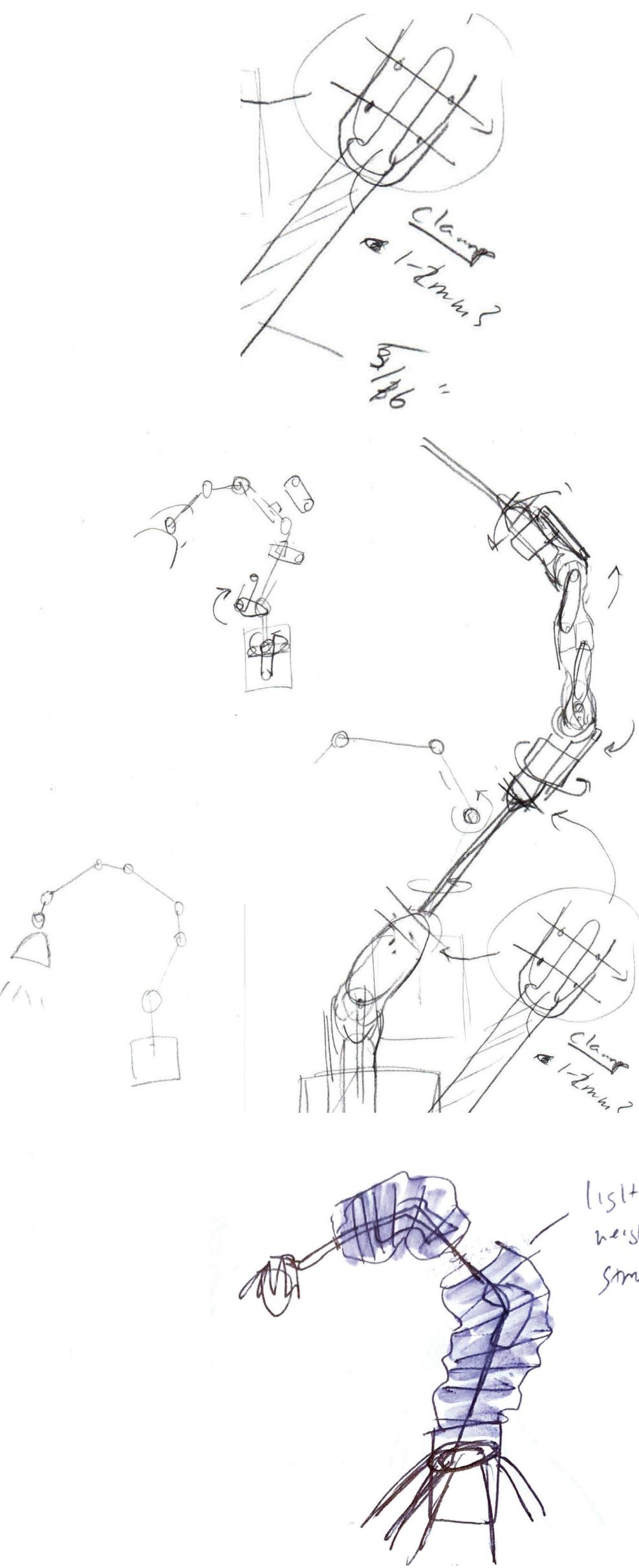


Yahboom Raspberry Pi Project AI Robot for Adults
Programmable Visual Robotice with HD Camera

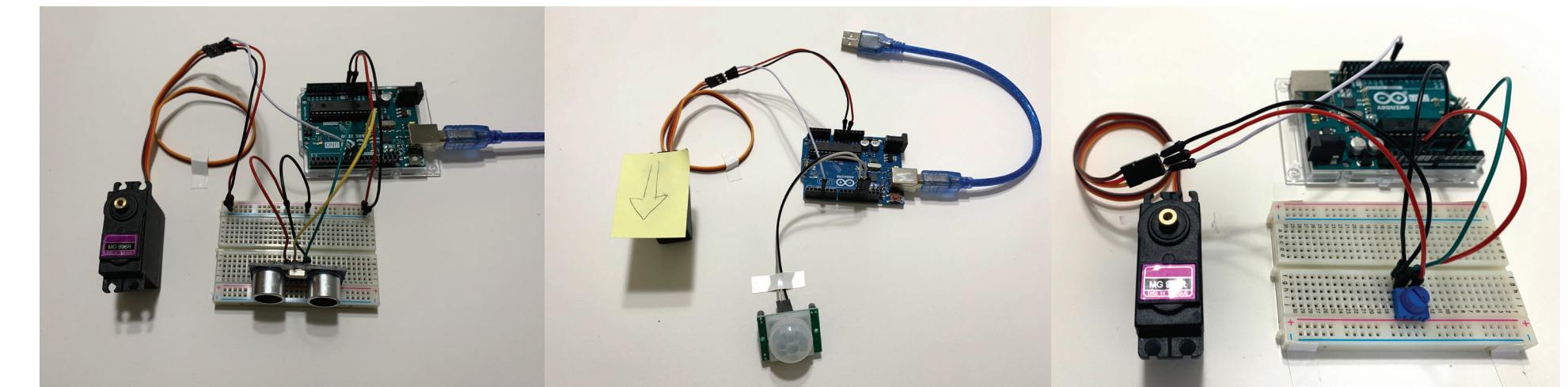
Concept Illustration



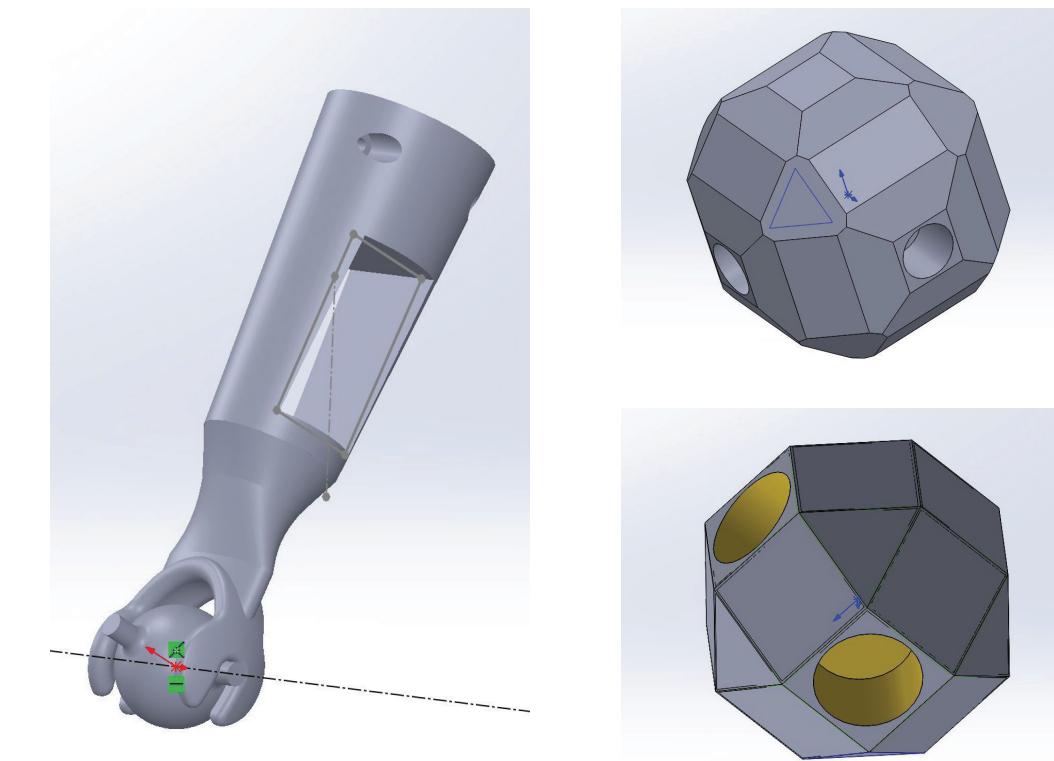
Design Details



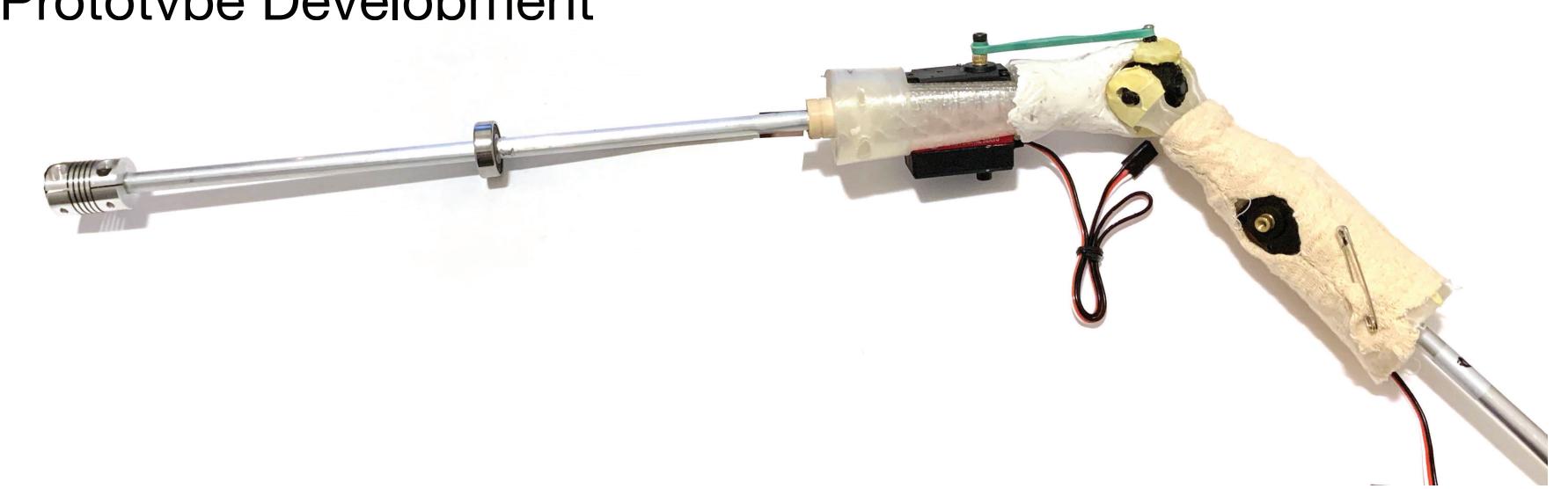
Arduino Experiments



CAD Development



Prototvpe Development



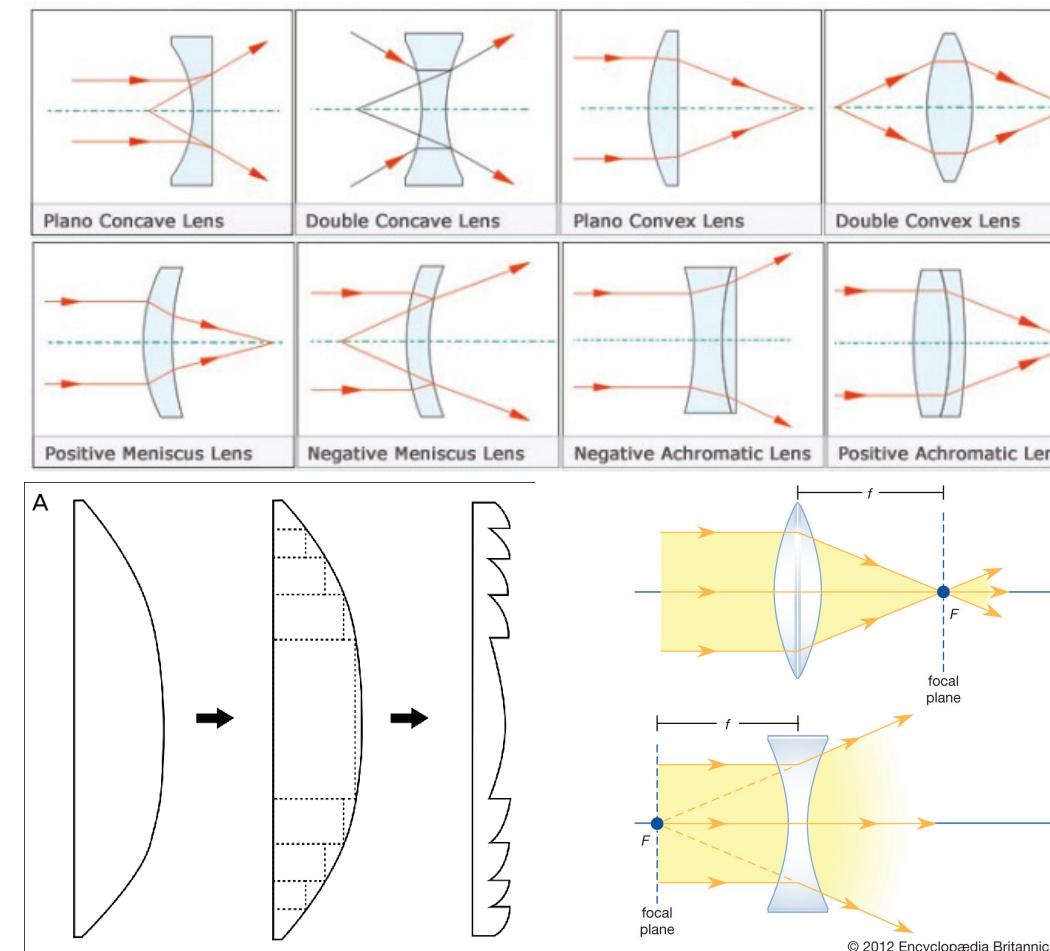
"POST MORTEM" SUMMARY

The interaction between user and lamp is a complex system. This first step of the project began by focusing on a key design component dubbed "the joint," which makes the lamp movement possible. My concept combined a universal gear with servos in order to create dynamic motion. Though a series of basic experiments between components (Ultrasonic Sensor, Potentiometer and PIR) with servos, I was able to expand my understanding of electronics, arduinos and code. These are documented on a [Github](#) account - as a sort of open source starting point for anyone else interested in recreating this journey.

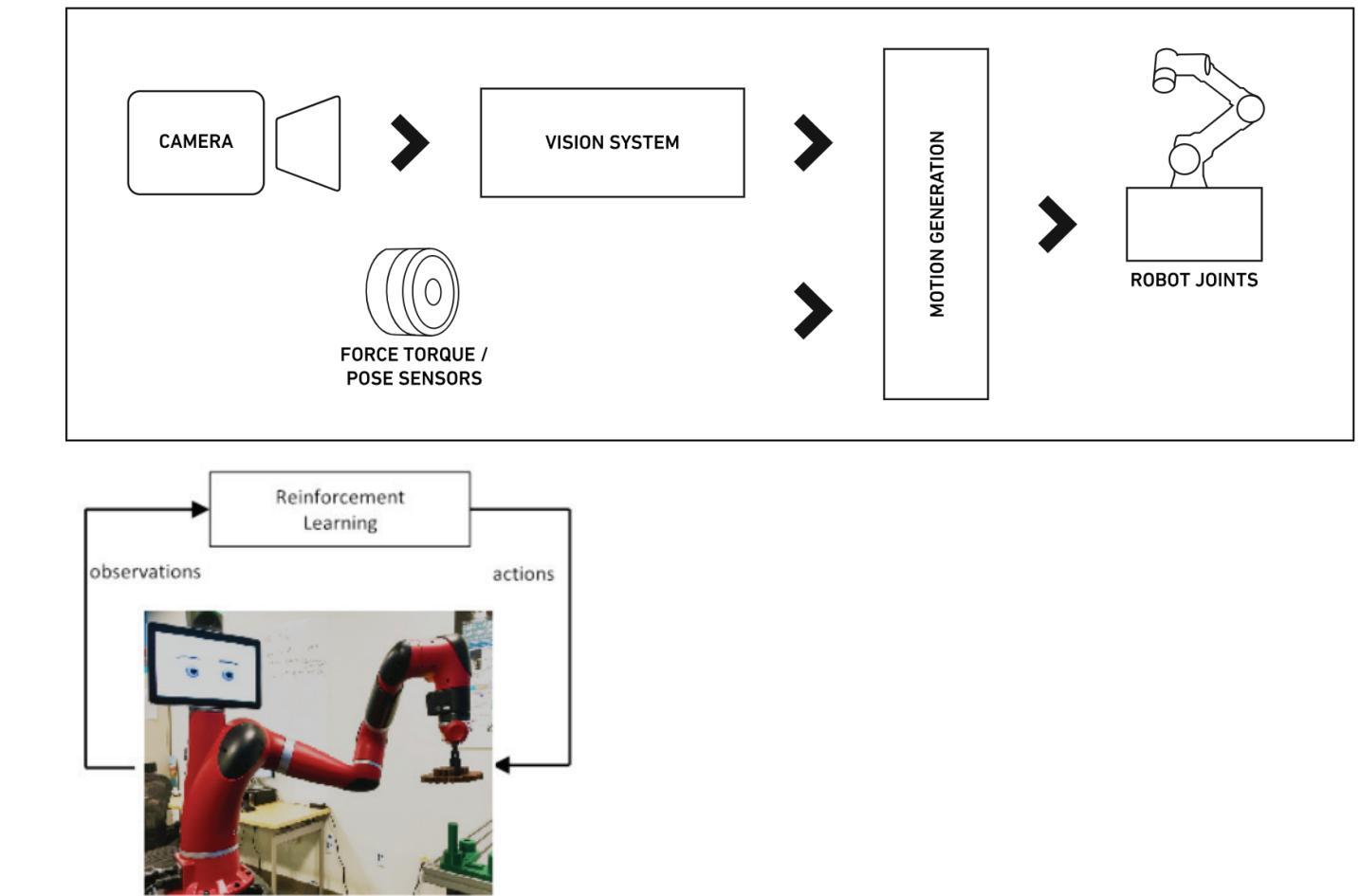
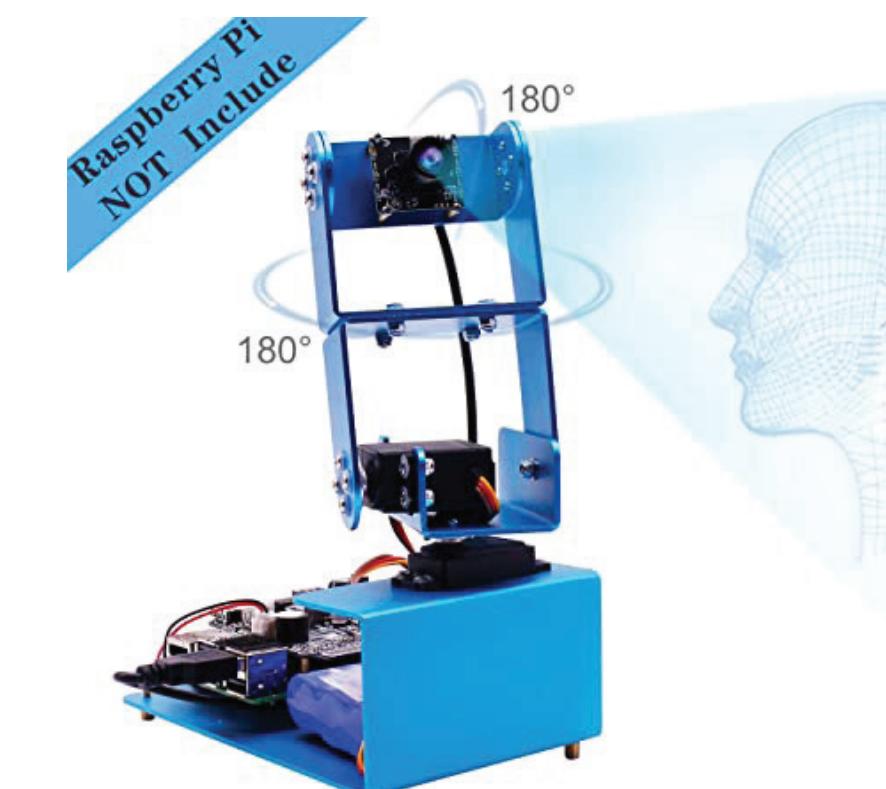
Next possible steps are three fold, (1) designing the lamp head, which will be the source of light and utilizing fresnel lens for focusing or diffusing; (2) learning to program an AI Camera as a source of input for motion, the user serving as a fiducial marker; (3) continue to prototype more complex motion, specifically with multiple servos working in series and experimenting with various inputs to trigger those motions.

Underlying all these directions is the structural designs that house these functions together into one silhouette. Finally, it will be necessary define and lay out an overview of interactions between human and lamp, both from an emotional standpoint (aesthetics, function and, materials) and electronically how these parts work in tandem.

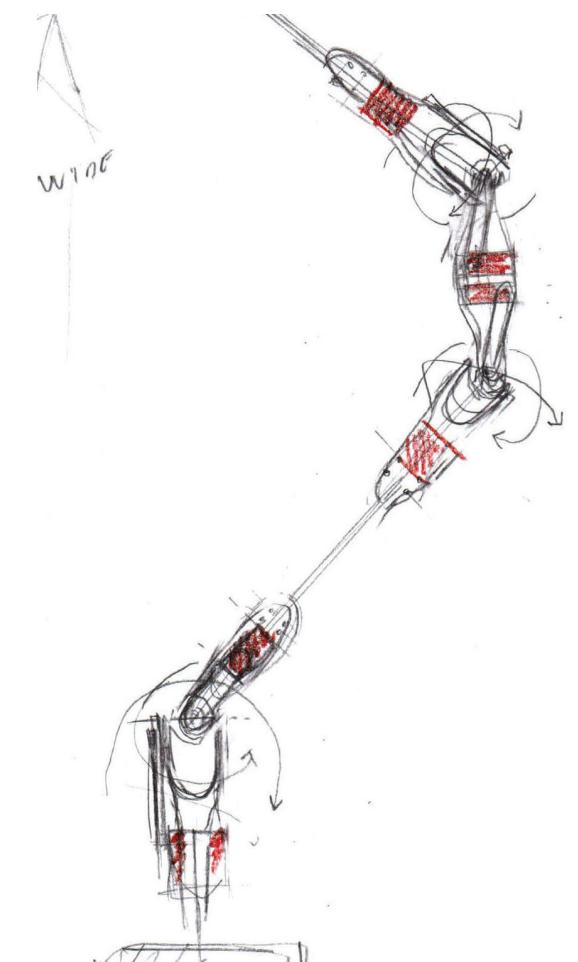
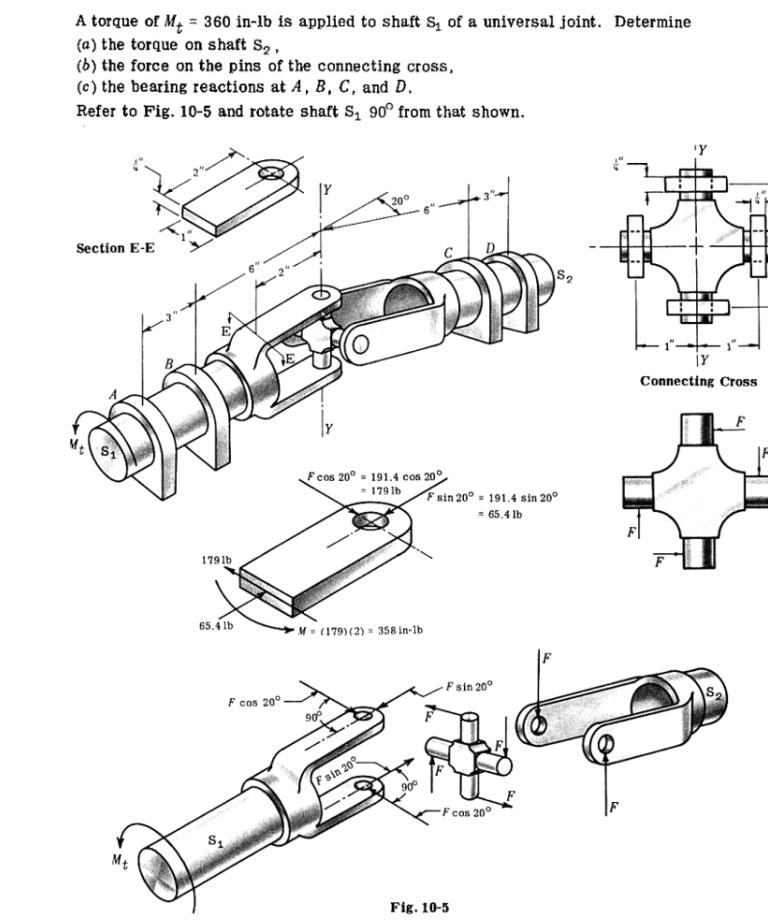
1 Fresnel Lens (Optics/Light)



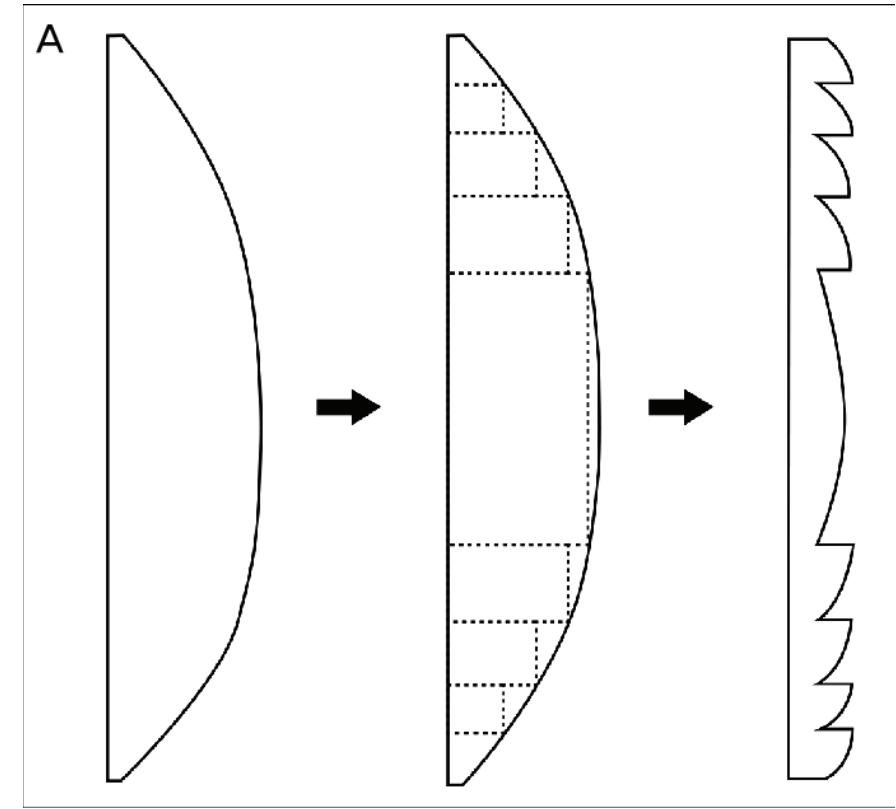
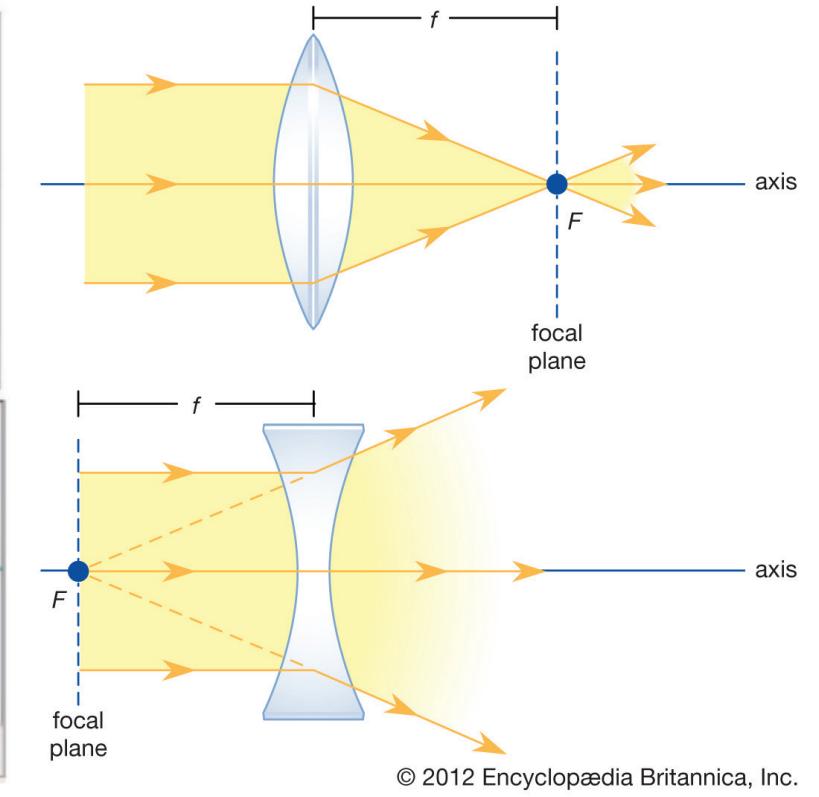
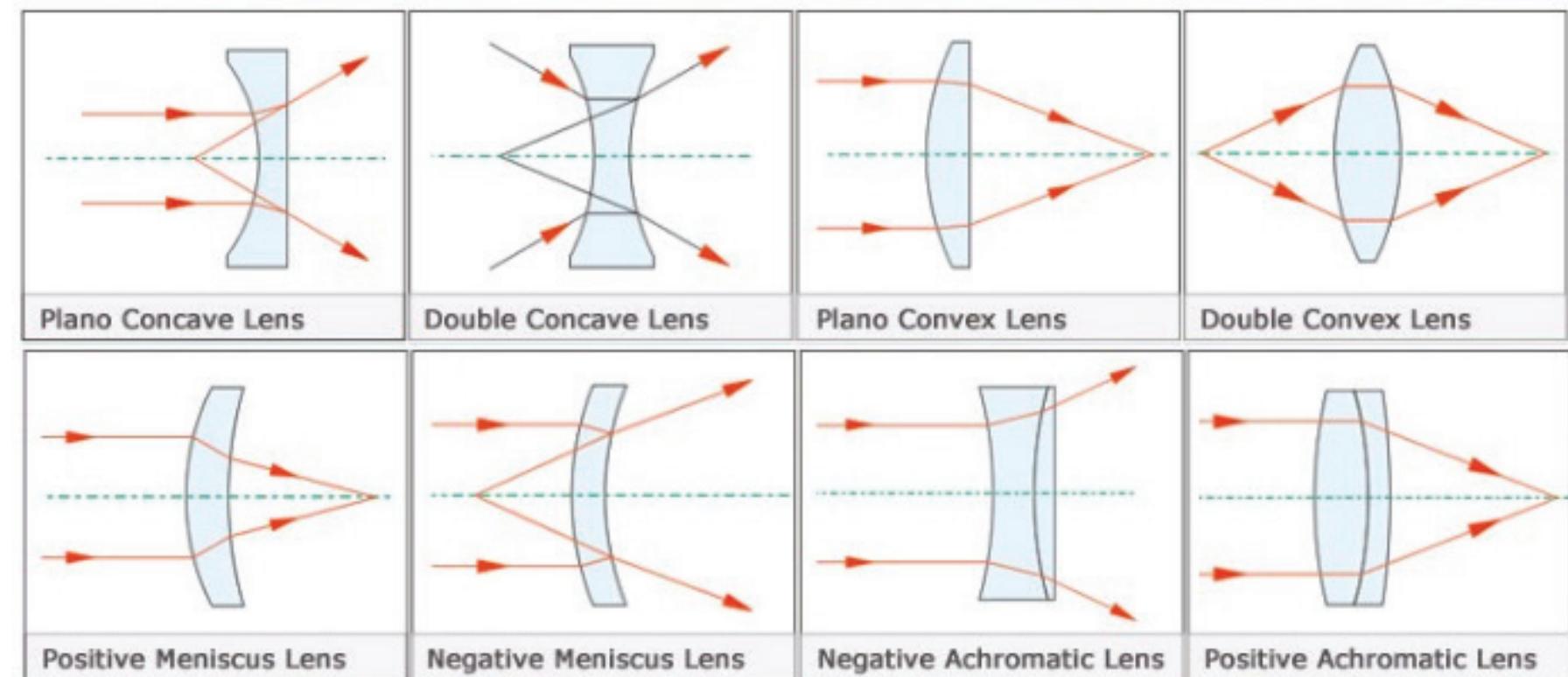
2 Motion Through AI Camera (Machine Learning)



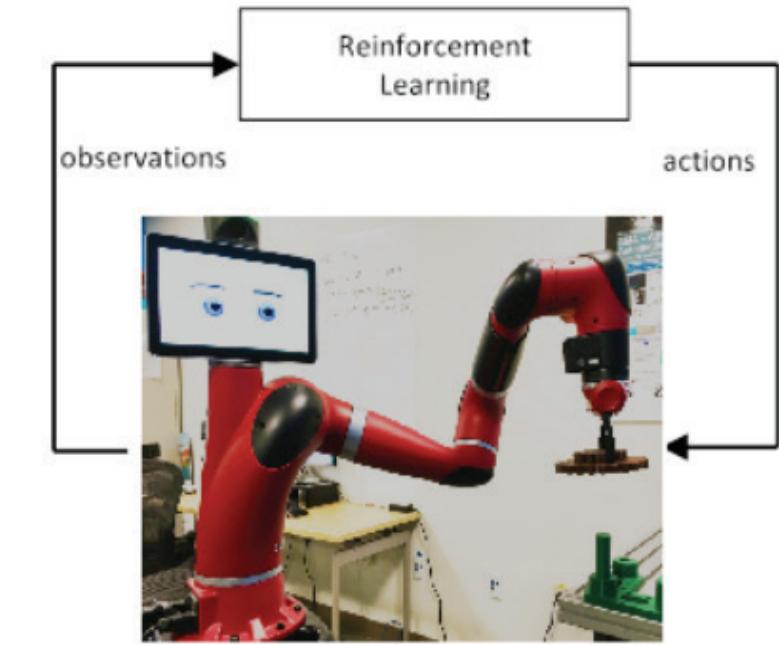
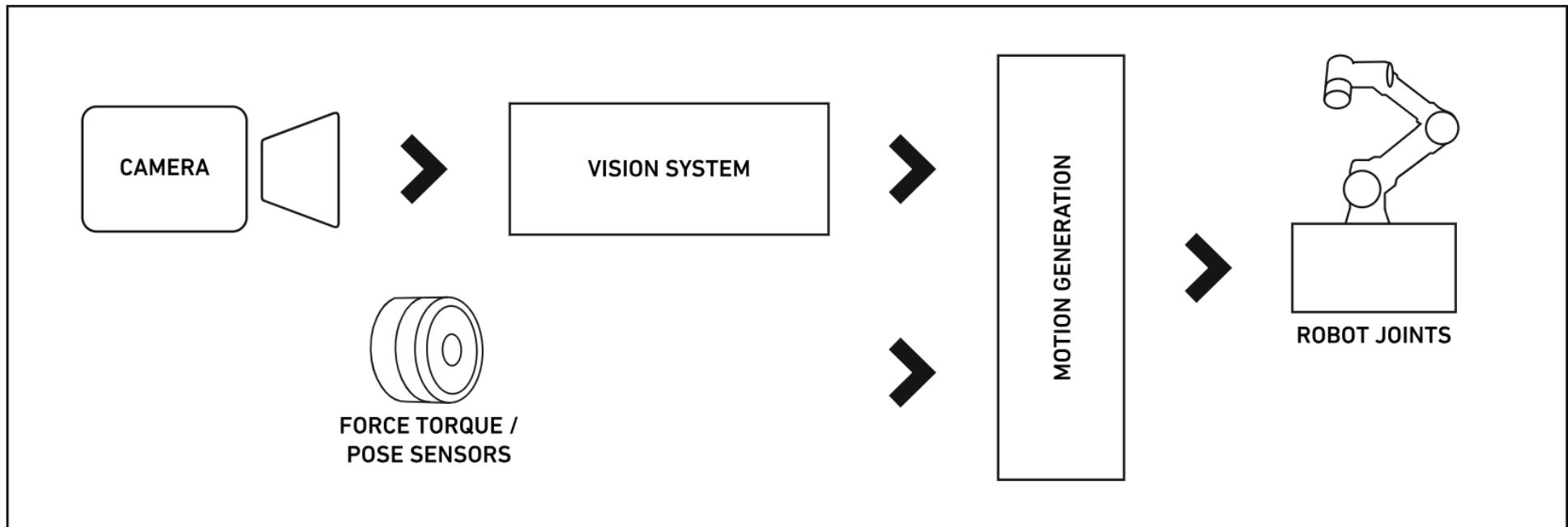
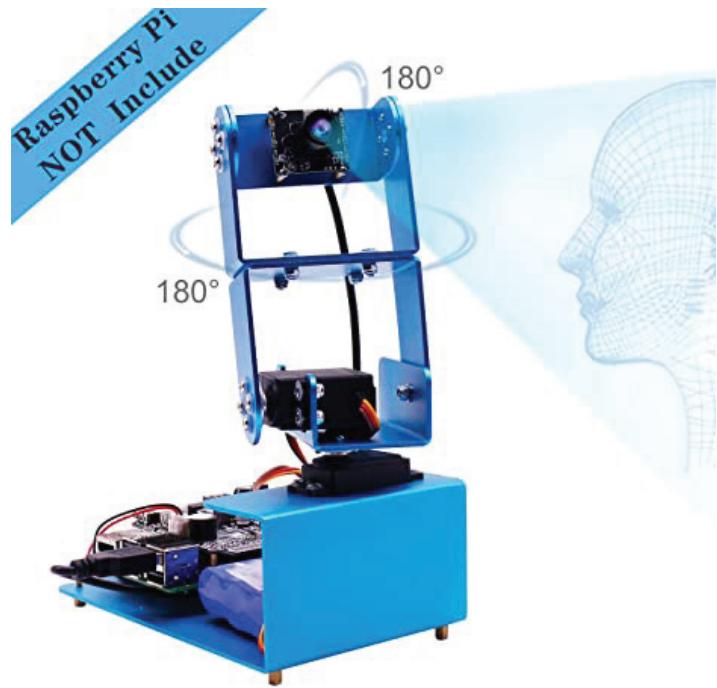
3 Universal Joints & Motion Training



Fresnel Lens Optics/Light



Machine Learning/ AI Camera



Universal Joints Motion Training

