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Mobile HRI Course

A. Feedback
   a. Reviewed group: Daniel Zhou, yh374, ck766
   b. The videos show feasible interactions with the robot, but I don't think they leverage the robot's mobile capabilities or communicate the intended application.
   c. Upon reviewing the storyboards, I have a better grasp of the goals of the interaction– waving to communicate traffic signals, clapping to turn on lights in a mine.
   d. I think you are on the right track.
B. Site
   a. Hospital medicine delivery

   i.
   ii. If we put a box on top of the robot, it can carry medicine to a patient's bedside.
   iii. There are many potential issues here.
      1. Fluids in a medical setting
      2. Making sure the right patient gets the right medication
      3. Verifying that the patient took the offered medication
      4. The robot may get in the way, or get stepped on.
      5. Medical settings require a great deal more privacy than typical public interaction
   iv. That said, there is a growing shortage of medical workers– anything we can do to help decrease their workload is good.
   b. Gates guide robot
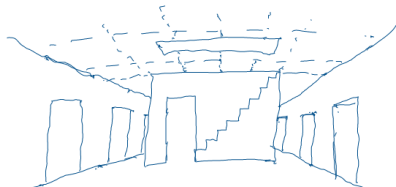
   i.

      ii.   If we put something like Amazon Alexa into the robot, we can have it take visitors to rooms within the building

      iii.   Again, the robot might be stepped on. It will also be difficult to communicate which room the user wants to go to. Also, the current robot is very slow and unable to navigate elevator gaps/buttons.

      iv.   This would be a charming way to introduce visitors to Cornell!

c. PhD lab dance party

      i.

      ii.   Everyone could use a pick-me-up, especially 1st year PhD students. When the user dances, the robot also dances. The skirt emphasizes the dance movement, while being elevated enough to not get caught in the wheels.

      iii.   This one is the easiest from a technical standpoint– most PhD students are going to enjoy a dancing robot.

C. Costume: Medicine Delivery

a.

b. Wire modesty

      i.   Wires could catch on IV stands and patient beds, so we covered them up. We cut wheel wells for the robot so the skirt would not catch on the wheels.

c. Role communication

        i.   The open box on top and exposed wheels communicate that it is a delivery robot.

   d. Team identity

        i.   Red cross, white outfit communicates 'medical staff'. Additionally, the red cross is facing the robot's 'forward' direction.

D. Wizard

   a. We found a 'hospital bed' for me, the patient, to lay on.

   b. We decided that the medicine delivery should be on a time trigger (like 6pm) instead of via voice activation, as time-based triggers are much more feasible.

E. Record

   a. Robot photos

        i.

   b. Reflection

        i.   In future iterations, we would replace the white + red outfit with the blue material of a nurse's scrubs. This should better communicate team identity.

       ii.   In future iterations, we will make the box and skirt waterproof to protect from the messy fluids of a hospital environment.

      iii.   In the interaction, the patient had to reach down to the floor to grab the medicine out of the robot's basket. Perhaps we should elevate the medicine basket to make it easier for patients to reach.

   c. Video sketch

        i.   https://youtu.be/0fKNfsN-Z_4

   d. Collaborators

        i.   The Autonomous Systems Lab helpfully provided scrap cardboard,double sided tape for assembly, and red tape for the Red Cross aesthetic.

       ii.   Frank Kim, Daniel Zhou, and Wendy Huang lent occasional feedback and paper materials.