COMP 4510
Mobile Robotics II
Fall 2019
Prof. Yanco

Assignment 2: First reading discussion

Out: Thursday, 12 September 2019
Due: Thursday, 19 September 2019

Write a one page discussion of the paper handed out in class today (Micire, M. J. (2008), "Evolution and field performance of a rescue robot," *Journal of Field Robotics*, 25: 17–30).

In the discussion of the paper, you should briefly summarize the paper (no more than two or three sentences), then discuss the pros and cons of the paper's approach. You should also list at least three issues that you would like to discuss about the paper; these issues could be in the form of questions, if you'd prefer. These summaries must be original work and should include proper citations if you take any material from other sources. See the sample paper critique attachd to this assignment as an example.

Sample Paper Critique

Paper Title: Personalised Robotics

Summary:
This paper presents a novel way to cover up the rather unattractive shells found on current robotic platforms. By introducing personalized avatars to cover the robot, they suggest that users will feel more comfortable working with the robot as a lifetime companion.

Pros:
It's a very nice idea to try and enhance the anthropomorphism that already occurs with robots. Humans are wired to interact socially with others and roboticists are slowly building these social mechanisms into their robots. Avatars have proven very successful in online communities as well as video games, so their use to personify a robot seems a logical extension.

Cons:
The claim is made that personalized robots will "facilitate the evolution of a richer mutual understanding and heightened bond between human and robot." However, they don't present any evidence of conducting any user studies or evaluations of their interface.

Discussion:

- Many users (including me) of head-mounted displays (HMDs) complain of "simulation sickness" (see http://www.hitl.washington.edu/publications/r-98-11/node134.html for a definition.) No attempt was made to address this issue in the text, but is a vital component of a system that requires users to don HMDs. The visualization presented in the HMD could just as easily be used on a display on the robot. They countered this argument by arguing that multiple users would then be forced to see the same avatar. Why couldn't the avatars share the screen real-estate? Perhaps two screens could be installed on the robot? Also, if the robot is being used by two people, who gets control? If user A tells the robot to move north, while user B tells the robot to move south, what does the robot do?
- The best figure in the paper was saved till the end and referred to multiple times. It would have served the paper better had it been Figure 1.
- The paper was missing references to seminal works in behavior-based robotics (Rodney Brooks) and Mixed Reality (Paul Milgram). Also, it is hard to defend a position as "widely" held with only one reference. By giving three or more references for such a statement, you defend your position.
- An interesting experiment might be to compare the results of someone using this HMD approach to someone interacting with the same avatar on a screen situated on the robot. Are they able to complete a task quicker? Is it more satisfying?