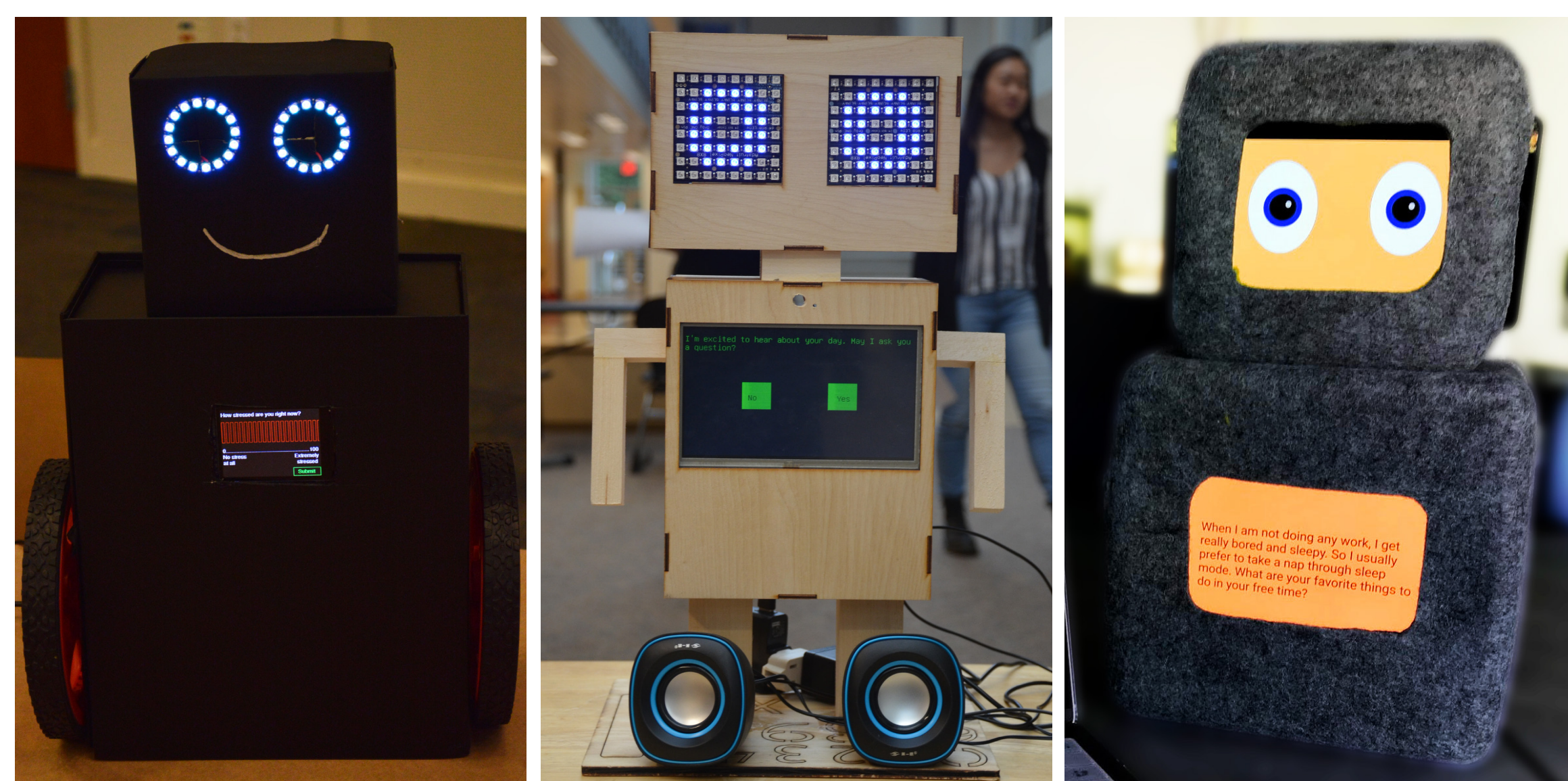


NRI:INT Design and Development of a Social Robot Researcher to Gather Ecological Momentary Stress Data from Teens

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Project EMAR

Project EMAR (Ecological Momentary Assessment Robot) is an interdisciplinary project to research, develop and deploy an engaging and customizable social robot to gather ecologically valid, teen stress and mood data, in a public high school setting.



Participatory Methods for Data Collection

Using human-centered design, we leverage participatory methods to engage teens as co-designers for EMAR. We maintain contextual validity by conducting all studies in schools where the robot will eventually be deployed.



Design Challenge

We challenged seven schools to use human-centered design to create a social robot to address teen stress. They presented their robots at a public showcase and received feedback from experts. Findings: The diverse designs show the need for a customizable robot platform. Teens expect robots to offer support that is material, active, and ephemeral.



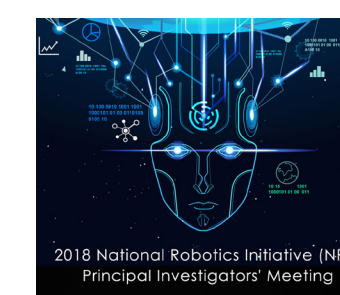
Virtual Reality

Utilizing teens as co-designers we created an asymmetric, virtual reality game in which teens collaborate to design a social robot and explore Teen-Robot interactions through role play. Findings: Teens shared lots of positive emotions toward each other and the robot during gameplay. In addition, teens slipped comfortably into role play, demonstrating potential teen-robot interactions.



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Interaction Studies

We invited teens to express (through storyboards and activities) how a community-based, social robot should interact with them at school. We then engaged teens as codesigners, interaction script writers, teleoperators, and witnesses during in situ, teen-robot interaction studies.



Findings: Teens enjoyed interacting with low-fidelity, cute, and boxy robot prototypes and immediately showed strong engagement. They expressed their desire for a social robot as an appropriate technology for gathering data from teens and expressed empathy toward the robot and one another.

Next Steps

From our preliminary data, we are confident that we are on the right track to design a culturally appropriate and engaging social robot to gather mood and stress data from teens. Future studies include interaction studies with a mid-fidelity device, including more complex interactions, and finally a longitudinal deployment in a high school.