

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



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Project EMAR (Ecological Momentary Assessment Robot) is an interdisciplinary project to design, develop and deploy an engaging and customizable social robot to gather ecologically valid, teen stress and mood data, while delivering a micro-intervention.



Project Activities 157 studies conducted so far.
Partnerships with 12 local area high schools. Engaged with 400+ teens.

Requirements
Customizable - ability for teens to change robot facial expressions, sounds, etc

End-user programming
- Be able to create a robot that fits their needs and preferences

<p>Community Robot</p> <p>Half dog-half mailbox (a) Mailbox robot (b) Simple decorated robot (c) Simple decorated robot with a hat (d)</p>		<p>Robot that delivers inspiring messages to passengers. It lives outdoors in a public space, such as a city park. This robot is meant to be used by passengers of all ages, serving as an inclusive technology.</p>
<p>Mental Health Robot</p> <p>Holding a heart creature (e) Geometric robot (f) Aquarium robot (g) Cactus robot (h)</p>		<p>Robot provides micro-interventions to decrease levels of stress and anxiety. It lives in libraries, at home, or in a school. This robot is meant to be used by the youth.</p>
<p>Educational Robot</p> <p>Dressed up robot (i) Playful robot (j) Back covered robot (k) Vampire robot (l)</p>		<p>Robot enables the training of educational skills by repeating exercises with students. It lives in a school or a summer camp. This robot is meant to be used by children.</p>

Project Approach Using a **participatory** approach to **human-centered** design, we engaged teens as co-designers to develop project principles and social robot requirements.

Broader Impacts
Teens are the **future roboticists**, designers, and engineers.

Novel, creative and scalable **solutions to support their mental health** are essential to the success of our future.



Next Steps:
Studies exploring remote access to EMAR given COVID. Deployment study in a public high school to explore adoption and impact.

