Project Icebreaker

Systems NODE, Portland State University

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Abstract

The Icebreaker project aims to increase empathy through a physical robotic proxy and serve as an organizing principle for the NODE systems science student group. Robots are poised to exist at the intersection of the physical and the virtual. Interaction with physical machines will increase as we enter the age of ubiquitous inexpensive computing. With social interaction moving to virtual environments, the icebreaker robot attempts to connect people virtually in physical space. Icebreaker aims to induce social interaction by requiring assistance from a passerby. The robot then facilitates an asynchronous dialog with other humans in virtual space. Whether the interaction increases cooperative social events in physical space and the differences between virtual and physical interactions are explored.

How can a robot encourage empathy?

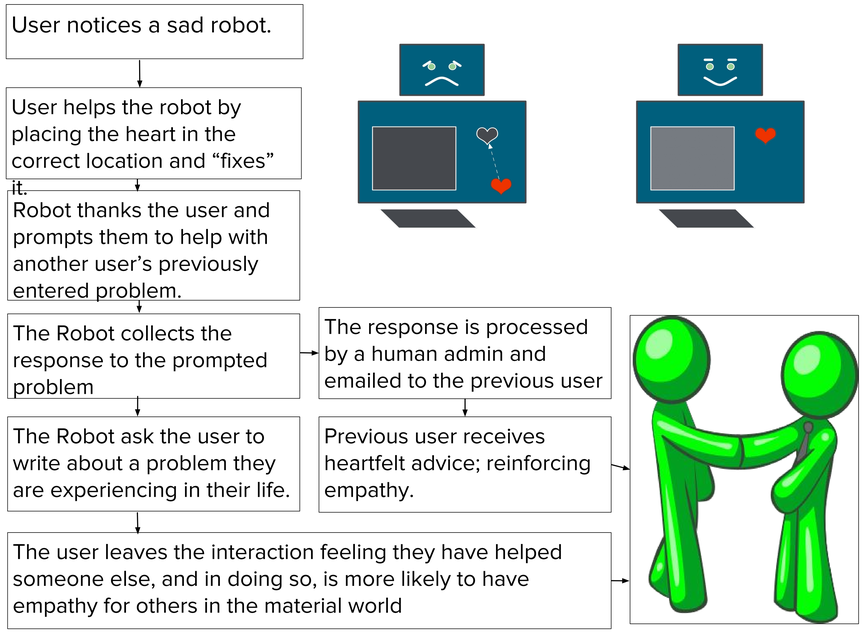
Why build a robot?

There are a couple of really exciting things happening right now:
1. People are interacting digitally at an increasing rate
2. Robots are getting smarter and cheaper to build

At systemsNODE, we see these trends running into each other as a great opportunity. We believe that robots sit in a unique place between the physical and digital worlds. This drives us to explore how they can be used to create positive social interactions, instead of replacing them. Our first journey into this field is Project Icebreaker:

The Icebreaker Robot is a stationary robot that facilitates an asynchronous dialog between humans in virtual space—he helps people talk to each other without them meeting or getting to know each other. His brain is a Raspberry Pi micro controller and his body is made of simple building materials that you can find at the hardware store. The Icebreaker Robot's face has some features that we've 3D printed and his expression can change between happy and sad. He talks to people with a text-based conversation that's displayed on a screen built into his body.
One cool thing about the Icebreaker Robot is his heart. In his default mode, his heart is out of place. There's a heart-shaped hole in his body where a passerby needs to put it. Once someone stops and puts his heart back in place, a magnet in it fires up the Raspberry Pi. This makes his face go from sad to happy, lights up some "robot looking stuff" in his body, and starts a series of prompts on the screen.

Device Fabrication



First we set up the Icebreaker Robot in a place where a lot of people will walk by. (We'll be starting on the PSU campus for our test run. After that, we'll move to a location out in the Portland community.) Once we have the Icebreaker Robot set up, he'll sit there patiently waiting until a kind passerby helps him out by putting his displaced heart back in his body.

When they do this, the Icebreaker Robot's Raspberry Pi brain gets to work and he comes to life. The screen in the robot's body says, "Thank you so much for helping me. I couldn't have done that without you. You were so helpful to me, I was wondering if you wouldn't mind helping a friend of mine?" If the passerby agrees to help, the screen displays a previous participant's request for help and the passerby is given the opportunity to offer a short piece of advice.

Once they've typed in their advice, the passerby is asked if there's anything that they would like the robot to ask his friends on their behalf. If the passerby chooses to submit a request, they're given three options for how the Icebreaker can get a response to them: it can be anonymously posted to a Twitter feed, they can find Project Icebreaker on Facebook and receive a personal message of the response, or it can be emailed directly to them.

When the passerby has completed the interaction and walked away the Icebreaker Robot's heart returns to its displaced default mode and he waits patiently for the next passerby.

Project Future

The Icebreaker project is designed to improve empathy by producing a platform for researching social computing. The design is open source, replicable, and customizable so that researchers can collect metrics for specific questions regarding Affective (emotive) Computing, urban empathy, and user experience studies.

The project is also designed for artistic implementations, so that future creators can experiment with new media and ways of improving interaction within the community. Suggested materials for future icebreakers include corrugated plastic, found objects, foldable canvas, and paper for temporary setups. The Raspberry Pi cost $35, and we spent about $40 on the interface.

The interface code and 3D print documents are published on github: https://github.com/syscnode

NODE organization

While every organization could be thought of as evolutionary, NODE explicitly attempts to increase replication through documentation and simplicity. The Icebreaker project does not require expert technical expertise and has the secondary purpose of increasing social interaction for its members. NODE exist as a vehicle for systemic organizational experimentation. Finally, the attendance, learning, and cohesion of the members of NODE are considered.

If you are interested in completing this project, or starting others with us, please see our contact information to learn about our regular meetings and build days. Open to all majors, and anyone interested in

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