Ritchie the DeskBuddy

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Abstract
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Introduction
There are a wide variety of resources available to people to keep track of events and activities, remind them about these, and to make them more productive. Two approaches are commonly used: 1. using physical reminders such as post-it notes and diaries. The drawback here is that the user is physically constrained. For example if the user has post-it notes at home, these notes aren't accessible when she is in the library; and 2. using software reminders, such as Google Keep and Google Calendar. Although they are available to use for free, these are easy to ignore as they only exist virtually (only provide simple notifications) and are not reflected sufficiently enough in the physical world.

This project attempts a new approach to this application.

What if it were possible for a physical object in a user's space that could draw attention and spark user reaction in a more effective manner? What if there could be an object that can play the role of a friend that reminds a person about the occurrence of an event? Wouldn't it be great if someone were to tell you to stop what you were doing and keep up with your new year resolution of running 5K everyday? Graphical User Interfaces, by their nature, do not create an emotional bond with a user in most interfaces. Having an emotional bond with an object can greatly enhance user experience with that particular object, irrespective of the simplicity of its purpose.

Ritchie the DeskBuddy is just the device for the role. Ritchie is a 3D printed robotic tiger that sits on a user's desk and reminds them of events or activities that need to be done. As an internet-connected device, Ritchie can be of great utility when provided with pertinent data sources. To be clear, Ritchie is not an AI robot. It cannot tell you what you need to do, or tell you about the weather. Nor can it specifically remind you to buy some eggs on your way back home. What Ritchie can do is wave its arms and move around to get your attention about something important. The rest is upto the user to check on the topic of concern. The events can range anything from small everyday events to more important things that demand immediate action.

Related Work

Peek et. al [4] describe *Hangster*, an ambient display that embodies virtual interactions using physical devices hanging on strings. These devices are designed to look like personalized avatars. *Hangster* allows a person to see their friend's status (online/offline) on a messaging application (by lowering/raising the avatar), and allow some simple interactions - e.g. initiate a conversation by gently tugging on the avatar string, show notifications by moving. *Dino*[1] is an ambient display that controls a physical object to react to the nature of conversations on a chat application. By studying the content of the conversation, the 'egg' moves to show whether it is happy, sad, angry or calm. Similarly, *Availabot*[2] is a computer-controlled push puppet that stands or falls down to reflect a friend's availability (online/offline status) on a chat application.

Jafarinaimi et. al [3] describe *Breakaway*, an ambient display that attempts to encourage people who sit for long periods to take more frequent breaks. This is implemented using a shape-changing artistic sculpture object. User's position and posture is tracked using various sensors. Shape and movement of the device reflects the user's pose - upright when the user takes a break, and slouching when the person has been sitting for extended periods. Similar to *Breakaway*, *MoveLamp* [1] keeps track of a person's physical activity at the workplace and attempts to encourage physical activity when a person has been sitting for long periods. This made use of a pedometer application on a smartphone, in combination with software on a computer to control an ambient lamp that changed color from green to red to make the user aware that they need to move. Rogers et. al [5] investigated whether ambient displays can be used to influence behavioral changes among people. In this study, they installed twinkly lights in the carpets to unconsciously guide people to take the stairs. A large ambient display in the common area was used to visualize the number of people using the stairs vs. those that chose to use the elevator. While each of these were implemented differently, they shared a common goal of nudging a user towards an action and observing common behavioral changes over extended periods of time.

[1] Dino - Ambient Display Creature: https://www.youtube.com/watch?v=AvST9wjrkC4
[2] Availabot: https://www.youtube.com/watch?v=w0voYnEjFcQ

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