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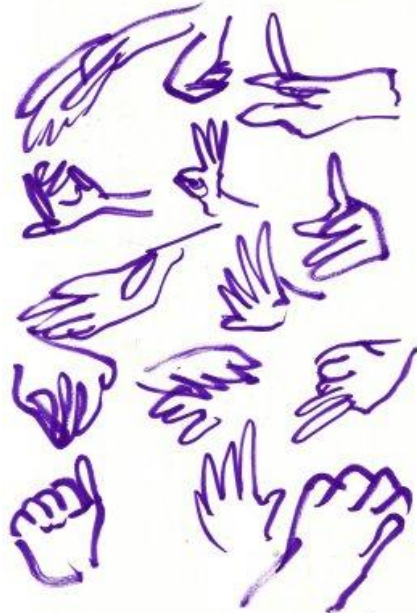
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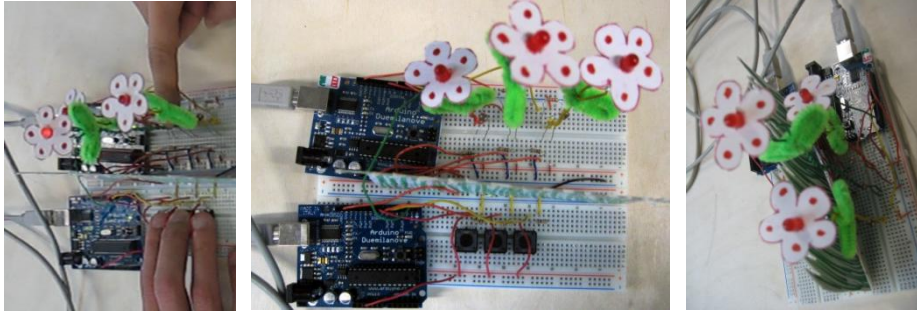
OpenGest

OpenGest is an initiative by me that aims to enable people to communicate with one another using natural gestures through an interface based upon computer vision and gesture recognition techniques. With the OpenGest interface, anyone having access to the internet and with a webcam can input what he/she believes are the natural gestures and their corresponding meanings into the OpenGest library; at the same time, everyone can use the interface to compose emails, send SMS, control software applications with the collective data stored in OpenGest library.

Unburdened *Sleep* Pillow

Unburdened Sleep Pillow is a pillow that records and stores a user's bed time thoughts as the user is falling asleep, thereby unloading the user's mind at sleeping time, and organizes the thoughts and reminds user of the messages the next morning. This concept design project starts with people's familiarity and intimacy with common bedroom objects such as a regular pillow, and aims to enhance the affordance of pillow and make intangible information feel more tangible.



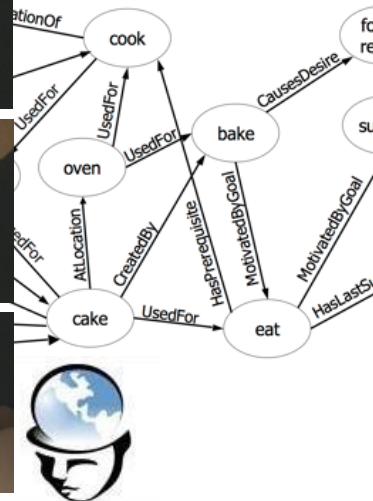
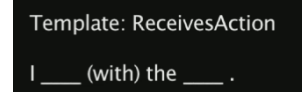


GambleFlower

GambleFlower enables people to play a simple guessing game in Arduino, with one person controlling the button on one side of the "grass" and the other person guesses the result by touching the flower. Correct answer(s) are indicated with the flower lighting up.

TouchStone

Despite their popularity, traditional methods for teaching a second language contain many unsatisfactory features such as "flash card" approaches to vocabulary acquisition, complex grammar rule memorization, and a little direct application to the learner's life. To remedy these issues, we present Touchstone, an adaptive language environment that integrates into the user's home and helps them learn a second language as they go about their daily life. Through the use of activity recognition and common sense reasoning, Touchstone avoids the use of native language and provides knowledge in an immersive and natural manner. This project was created by Ned Burns and Henry Lieberman of MIT Media Lab; I have been part of the research team so far in this ongoing project.





Kiwi

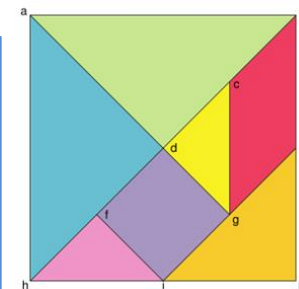
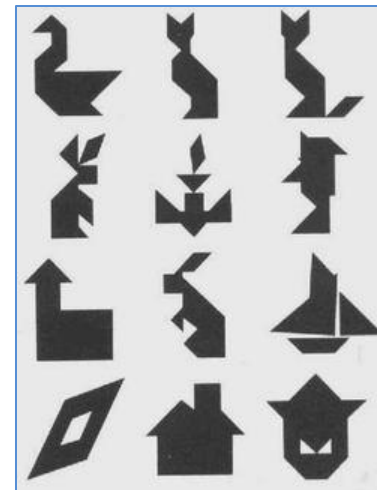


Kiwi is a digital pet that motivates kids to study through acting as a friendly companion and asking for help in academic materials while subtly guiding kids in the correct learning direction. Kiwi's novelty lies in that it reverses the traditional roles of a teacher teaching and kids following; instead, Kiwi gives kids the power of mastery and stimulates active thinking of academic materials by asking the kids for "help". In further develop the sense of mastery in kids, Kiwi behaves like a real pet that survives and grows upon kids' feeding food, except in this case the food is knowledge and exercise problems.



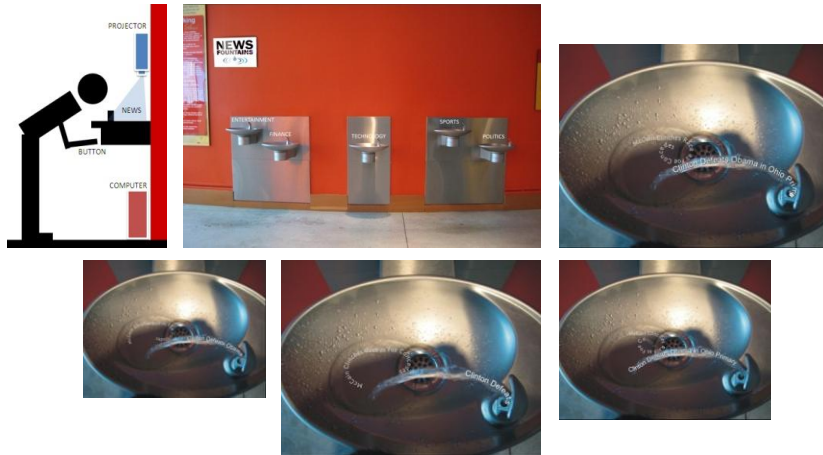
Tangible TANGRAM

Tangram is an ancient Chinese moving piece puzzle. In the old days, people used to play it with paper cuts. Nowadays numerous software tools are available to the public for playing this game online. Tangible Tangram aims to bring back the puzzle's tangibility and increase its interactivity with people. With Tangible Tangram, people will be able to play in the same way that they used to play with paper cuts. Assessment of correct shape being formed is enabled through Computer Vision techniques. When the correct shape is formed, the whole Tangram will give visual and audio feedback with embedded LED lights and inbuilt audio systems.





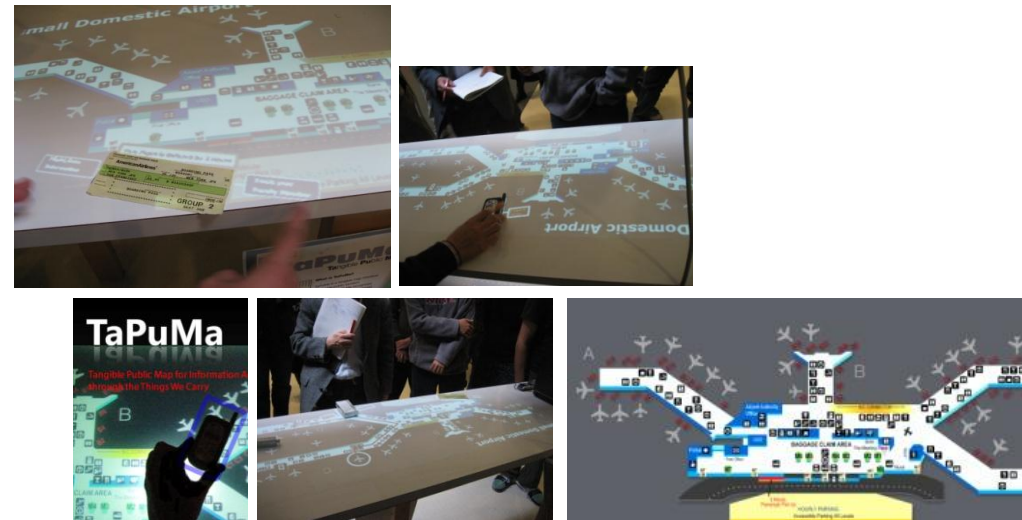
News fountains



Never before has there been a time when humans are so thirsty for information that mobile computers are thriving prosperously and big display screens are crowding the street. But as Mark Weiser has put it, "The truly profound technologies are those that disappear," I made my first humble attempt of designing news fountains around MIT campus. Having noticed the extraordinary amount of water fountains inside Stata Center, the convenience of wireless connection, and the good habit of students' drinking water constantly, I designed a simple system that required only a computer to retrieve RSS news feeds and a projector to project news headlines onto the flowing water.

TaPuMa Tangible Public Map

TaPuMa is a Tangible Public Map, which allows people to use their own belongings, the objects they usually carry with them to access relevant and just-in-time information and locations of places from a public map. The project also explores and analyzes the advantages and challenges of this novel interaction mechanism, where real life objects serve as the interface for information acquirement. The broad concept behind the project TaPuMa is 'Object Amelioration', where the functions of everyday objects can be expanded by using their affordances or functionalities in a variety of different contexts.



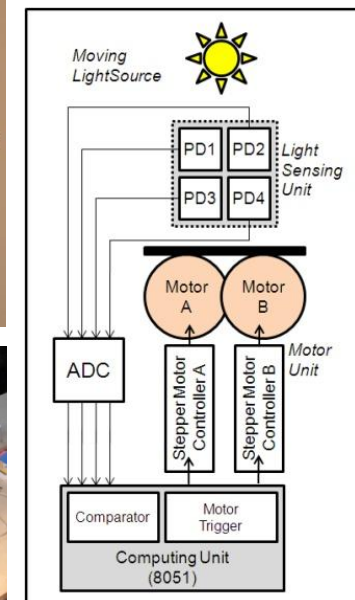
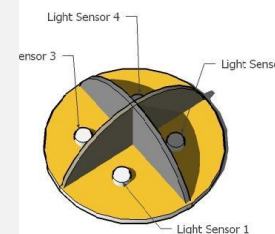
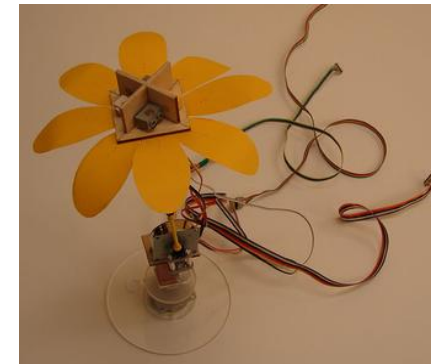


新新浪 SINSINA

I created a news website, Sinsina.com, which displays news items through only pictures. The philosophy behind it is that pictures are a more direct tool for conveying messages than Chinese text, which is a visual language in abstract form. With pictures, readers can actually “read Chinese ten lines at a glance.” The website gets RSS feeds from various sources and thus is constantly updating.

Sunflower

Inspired by sunflowers in nature, I designed and built a flower that could track the sun or the direction with greatest light intensity in any environment. This was the final project I did in MIT’s Microcontroller Programming class to demonstrate individual design and fast prototyping skills, after learning Intel 8051 programming within short time. Major components of SunFlower include a light sensing unit with four photo resistors, a rotating unit with two step motors enabling the flower to move toward any direction on a sphere, and various chips such as ADC. A year later, I built SunFlower again within a few hours during Physical Computing with Arduino course at CIID Interaction Design Program.

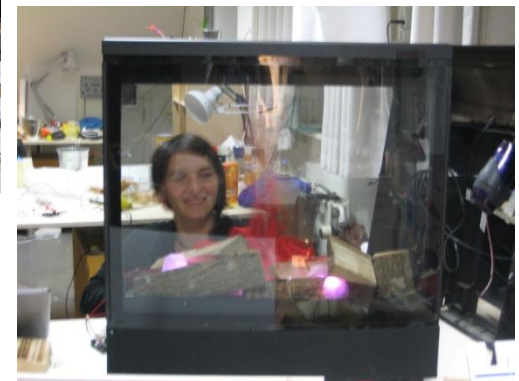




Trash can... is specifically designed for developing countries such as India, based upon my six-month experience of living and traveling in both rural and urban areas of India. Trash can... functions similarly to recycling machines in the US technically, except that it also gives people money for ordinary trash. With recyclable trash, Trash can... gives Rs.2 at a time; with ordinary trash, it gives Rs.1 at a time (Rs. 40 = \$ 1). With Rs.10, a beggar can easily buy 2 or 3 fried egg sandwich along the street. With the amount of trash along the street currently, a beggar can easily get Rs.50 in a single day. The total money needed to realize such a system, however, is much smaller than that the Indian government has spent in hiring people with at least Rs.2000 monthly salary per worker.

TVFire

In accordance with the final project theme during Physical Computing with Arduino course at CIID: Give Old Machines a New Soul, my teammates and I designed and built a "fire place" with an old TV. We took out the inner part of the TV and inserted instead four fans from old computers to blow clothing strips, colored by RGB LEDs, and a hair blow dryer which blows hot air out of the TV when a person hovers his hand over the top of the TV. This project exhibition also gave me a chance to explore the art of surrealism.





BlindGuardian

BlindGuardian is a scarf designed for helping blind people walk around the street just like normal people. It enables blind people to get rid of their wooden stick and still be aware of the surroundings through tactile contact with their clothing. The scarf has an embedded ultrasonic sensor for measuring the distance and speed of approaching obstacles and a small servo motor which vibrates at increasing speed in order to alert the user of the approaching obstacles.

Papers and awards

Network of Educators in Science and Technology Student Award (May 2004, award sponsor associated with MIT)
American Chemical Society Delaware Section High School Achievement Award (May 2004, for publication of an article on the Journal of Physical Chemistry in December 2003)
Delaware State Science Olympiad Competition Gold Medalist (March 2002, in chemistry event "Qualitative Analysis" and "Polymer Detectives")
National Science Olympiad Competition Gold Medalist (May 2003, in chemistry event "Qualitative Analysis")
Delaware State Mathematics Competition 2nd place (2003)
American Mathematics Competitions Certificate of Distinction (February 2004, later participated in American Invitational Mathematics Competition)
Engineering Competition, Teamwork, Team placed 2nd in Delaware State (2004)



Work experience

Software Developer in Software Agents Group of MIT Media Lab	(June 2009-August 2009)
Project Assistant in Human Dynamics Group of MIT Media Lab	(January 2009-May 2009)
Project Manager in Jobaphiles.com	(October 2008-March 2009)
Program Manager intern in Microsoft	(June2007-September2007)
Product Developer in Grid Technology Inc. , Fujian Province, China	(June 2006-August 2006)
Undergraduate Researcher in Fluid Interfaces Group of MIT Media Lab	(January 2007-May 2007)
Undergraduate Researcher in Nano-structured Origami Group of Mechanical Engineering Department, MIT	(February2005-December 2005)

Education

The Danish Design School / Copenhagen Institute of Interaction Design , Copenhagen, Denmark	September 2010
Master Diploma in Interaction Design	
Massachusetts Institute of Technology , Cambridge, MA, USA	June 2008
Bachelor of Science Degree in Electrical Engineering and Computer Science	
Charter School of Wilmington , Wilmington, DE, USA	June 2004
High School Diploma	
Beijing University Middle School , Beijing, China	June 2001



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