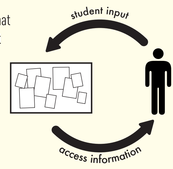
PORTAL

is a social network designed exclusively for the UArts community of students, faculty and staff.

In an age of information overload, it is imperative that we get our messages across clearly. Campus boards are over saturated with information, making it difficult to access and process important information. The goal in addressing this problem was to cut through the printed and online clutter, and provide a clear and easy system that gives students access to information while maintaining a simple method for student input and usability.

The PORTAL System provides an interface that resembles a message board for familiarity, but can be easy organized for better navigation. Using a gesture-based interface that products like the iPhone have made familiar, it becomes intuitive for students to approach and navigate the board.



1971. Seventy One was big in many ways. It was Joe Frasier v. Muhammed Ali. It was the birth of the Nasdaq, and the end of *The Ed Sullivan Show*. At a small school in Kentucky, the first "touch sensor" was developed by Doctor Sam Hurst.

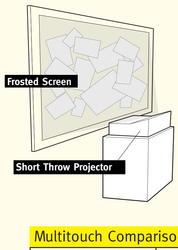
This sensor called the "Elograph" was patented by The University of Kentucky Research Foundation. The "Elograph" was not transparent like modern touch screens, however, it was a significant milestone in touch screen technology.

The first "touch screen" computers were released by Hewlett-Packerd shortly thereafter. These single touch devices while crude, actually tested more efficient with workers, than the mouse and keyboard.

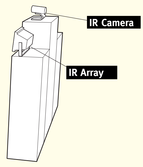
The technology for the most part remained dormant, until 1991, Apple Computers, patented "multi-touch" and a buzz began to stir. While there are many different types of touch technology, all are fairly simplistic in their construction. It's the minute details in feedback that make them each unique. ■

× BEHIND THE LOOKING GLASS,

the tech of touch.



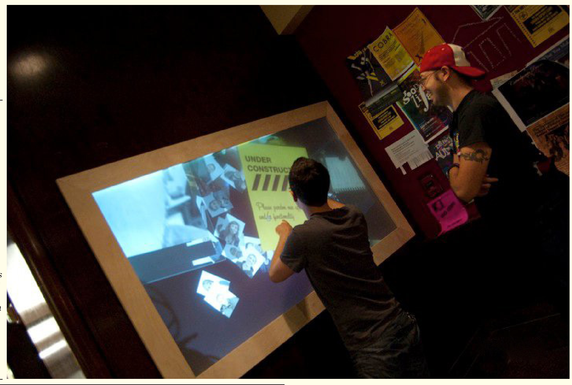
The technology we are using is called Diffused Infrared. We choose this method for a couple reasons. It lends itself to the space we were provided, as well as rear projection. It is quick to prototype, and most importantly, it's cheap.



The process of how it works is quite simple. IR arrays flood a screen, and as your fingers touch the screen, the IR camera picks up the light as hot points. The points, or "blobs" are translated by an open source touch recognition software that tags the blobs and feeds those tags to a server which interprets them as mouse points.

Multitouch Comparison

Technology	4-wire Resistive	SAW	Capacative	Infrared
Durability	3 Year	5 Year	2 Year	5 Year
Stability	High	Higher	Moderate	High
Transparency	Bad	Good	Moderate	Good
Installation	Built In/Onwall	Built In/Onwall	Built In	Onwall
Touch	Anything	Finger/Pen	Conductive	Finger/Pen
Intense Light-Resistant	Good	Good	Bad	Bad
Response Time	< 10Ms	10Ms	< 15 Ms	< 20 Ms
Following Speed	Good	Low	Good	Good
Waterproof	Good	Moderate	Good	Moderate
X, Y Detection	yes	yes	yes	yes
Pressure Detection	no	yes	no	yes
AirFlow Detection	no	no	yes*	no



PORTAL Alpha was installed into the entrance way to Terra. Initial tests were extremely successful. In the following days, the system quickly degraded. Upon further review, the system worked fine during class, but failed before it, the difference? We were in class at night. Alpha took on Vampiric qualities because of its inability to deal with the ambient, ever changing sunlight conditions of the front doors. Calibration was nearly impossible, and as many as 4 different settings had developed over a single hour-long session. The excessive settings would crash the touch servers, thus disabling the screen completely.

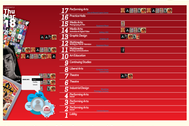
Plan B was enabled. Cry a little, then ask for more money.

× breaking down walls,

the interface.

Multi-touch technology adds a dynamic element to touch screen technology. The ability to "pinch" and "spread" are already natural movement languages that at least 71% of all cell phone carriers understand. However, beyond a multi-finger interface, the board can also become a multi-user interface that allows any number of students to interact with each other and the board at the same time.

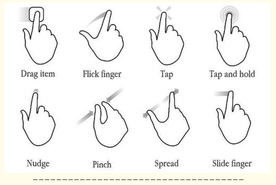
In its dormant state, the portal looks like the same jumbled message board. Digital flyers strewn every which way. Once the User walks up to the board, or if the board is seeking attention, it sorts. Further more, events are now tied to both departments and locations via "Threads." Students can choose to "tie" themselves to an event, thus tying themselves to one another.



Events Sorted by location/department

Event 'Threaded' to a department

Event 'Threaded' to participants & attendees



Natural User Interface, or **NUI**, is the common parlance used by designers and developers of computer interfaces to refer to a user interface that is effectively invisible, or becomes invisible with successive learned interactions, to its users. The word natural is used because most computer interfaces use artificial control devices whose operation has to be learned. A NUI relies on a user being able to carry out relatively natural motions, movements or gestures that they quickly discover control the computer application or manipulate the on-screen content. The most descriptive identifier of a NUI is the lack of a physical keyboard and/or mouse.

Multi-touch technology began in 1982, but gained mainstream exposure to the technology happened in the year 2007. The iPhone gained popularity, with Apple stating they 'invented multi touch' as part of the iPhone announcement. With over 45 million iPhones sold to date, it's hard to argue their 'reinvention' of a rarely tapped resource. The gesture language that Apple established has become the basis of multiple multi-touch application platforms. With an official patent on multi-touch granted on January 29th, 2009, it will be interesting to see how other companies challenge the medium beyond its constraints.

× the doorway of

the future.

The PORTAL System a lots for much more than just an event board. The ability to effortless aid a University User in wayfinding, information, and communication is merely it's facade. Being teachers as well as students, we experience many of the issues facing the common student populace. Printing issues, no stable, simple-to-use online classroom, or inaccessible information.

Unfortunately, ideas create waste. There are 75.5 million students who attend school in the United States. U.S. colleges and universities create about 3.6 million tons of waste a year which amounts to 2 % of the country's total waste stream. Almost half of that waste comes from paper. Much is recycled and more than half of it is not.

Imagine if you will this simple scenario. Students now each carry a school issued iPad as part of their tuition. As they approach the PORTAL, it can communicate with each student directly, greeting them, checking them in to class, and uploading their assignments automatically, before they even reach the elevator.

Upon entering their classroom, the Professor already has them checked in on the roster, and has their work on the wall ready to be critiqued. No need to print out the work, or wait for projection screens to log in. Class can begin immediately on arrival, thus making the experience more about the learning and less about the technology.