

# Bridging the gap between print and digital environments

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University of Houston Libraries

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Innovations in Teaching and Learning  
Technology Conference  
November 11, 2010

# Outline

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- QR Codes
  - Examples
- Augmented Reality
  - Examples
- Questions

# What is a QR code?

- Quick Response code
- Originated in Japan in 1994
- Denso Wave owns the patent
- 4,296 characters



# What do you put in a QR code?

- URLs to web pages, music, video, images
  - Business card info
  - Geo-coordinates
  - Text
- 
- Try to keep URLs under 300 characters for less complex code



# Simple vs. Complex



<http://info.lib.uh.edu>



<http://uh.summon.serialssolutions.com/search?s.cmd=addFacetValueFilters%28ContentType,Journal+Article%29&s.fvf=IsFullText,true,&s.pn=1&s.q=qr+codes>

# CSI explains QR codes

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[http://www.youtube.com/watch?  
v=43886f2co6I](http://www.youtube.com/watch?v=43886f2co6I)

# How do I generate one?



qr code generator



Search

Instant is on ▼

About 9,480,000 results (0.23 seconds)

[Advanced search](#)

Everything

Images

Videos

More

Houston, TX

Change location

Any time

Past 3 weeks

More search tools

▶ [QR-Code Generator](#) ☆ 🔍 - 5 visits - 7:40pm

**QR-Code Generator.** Content type: URL Text Phone Number SMS. Content: URL: Size: S, M, L, XL. Version: 1.00 BETA | Non-Commercial Use Only KAYWA ...

[qrcode.kaywa.com/](#) - [Cached](#) - [Similar](#)

[QR Code Generator](#) ☆ 🔍

**QR Code Generator** from the ZXing Project. ZXing Project Home Page.

[zxing.appspot.com/generator/](#) - [Cached](#) - [Similar](#)

[QR Code Generator - Create Your Own QR Codes - Delivr](#) ☆ 🔍

Create QR Codes with our **QR Code Generator**. A QR Code is a bar code that can be scanned using your camera phone and a QR Code Reader.

[delivr.com/qr-code-generator](#) - [Similar](#)

[QR Stuff: Free Printable QR Code Generator, Creator And Encoder ...](#) ☆ 🔍

Free **QR code generator** and encoder. Create QR codes ready to print or to add to a t-shirt. Create a cell phone or mobile phone readable 2D barcode ...

[www.qrstuff.com/](#) - [Cached](#) - [Similar](#)

[QR-Code Generator Tool - VCards, Websites, Messages, Emails & More](#) ☆ 🔍

Generate mobile barcodes (QR-Codes) with our **QR-Code generator** tool. Encode websites, VCards, messages, phone numbers, text meesages and emails with ...

[www.mobile-barcodes.com/qr-code-generator/](#) - [Cached](#) - [Similar](#)

[QR Code Generator and DataMatrix Barcode Generator](#) ☆ 🔍

Use of this **QR Code Generator** and DataMatrix Generator is free. Use the Barcode images for any purpose, including commercial use. ...

[invx.com/](#) - [Cached](#) - [Similar](#)

[QR Code Generator - create QR Codes online \[business card, t-shirt ...](#) ☆


# Features of generators

- Support foreign language
- Multiple sizes
- Generates multiple kinds of codes
- Multiple colors
- Can include vCard or iCal info
- Save as png, jpg or even pdf
- May give you the embed code



# Example of a generator



[Home](#) | [Services](#) | [QR Code API](#) | [About](#) | [Blog](#)  [en-us](#)

**Text** | **URL** | **Call** | **SMS** | **vCard**

First name:

Rachel

Address:

114 University Libraries

Last name:

Vacek

Postal code:

77204

Phone:

713-743-5820

City:

Houston

Email:

revacek@uh.edu

Organization/company:

University of Houston L

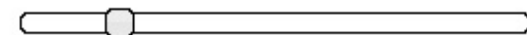
Website:

http://info.lib.uh.edu

Position/role:

Head of Web Services

Note: Most fields are optional. Address will only be stored within the QR Code if "Address", "Postal code" and "City" are filled out.



size: 250x250px

[Download](#)

[Open](#)

[Options](#)

[<Embed>](#)

# Why it's better to stick to a URL

- Flexibility
  - QR codes are static, content on web pages is dynamic
- Measurability
  - You can't directly track scans of QR codes, but you can measure resultant page views
- Simplicity
  - More content = more complex code = reduced readability

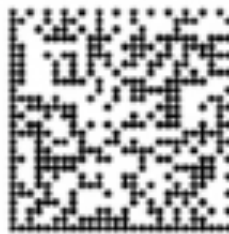
# Other 2d codes



QR-Code



DataMatrix



Cool-Data-Matrix



Semacode



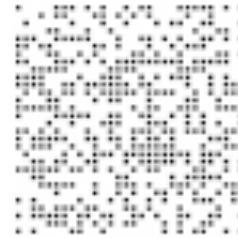
Trillcode



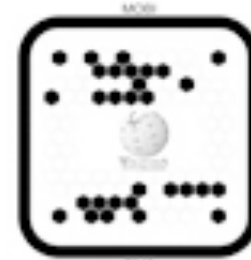
Quickmark



Shotcode



connexto



Beetagg



CFCHESS  
Qode

# Why QR?

- Open and international standard
- Proven technology
- Simple barcode scanners can read them
- 2009 Educause Report:  
“7 Things you should know about...QR Codes”
  - <http://www.educause.edu/ir/library/pdf/ELI7o46.pdf>



# What do you stick it on?



# Potential QR code applications

<b>Printed handouts</b>	To get more info, lecture links, library resources, etc.
<b>Assignments / Tests</b>	To ensure anonymity in grading.
<b>Classroom / Lab Equipment</b>	To view instructional video on how to use equipment.
<b>Submit Surveys / Feedback</b>	To link directly to web-based feedback forms, submit positive/negative feedback by scanning a particular code, etc.
<b>Experiential Learning</b>	To enhance learning games, historical tours, etc.
<b>Marketing signage</b>	To get more event info, schedule, map of location, etc.
<b>Books / Journals</b>	To link to e-versions or supplemental material.
<b>Study Aids</b>	To make cheat-proof flashcards.

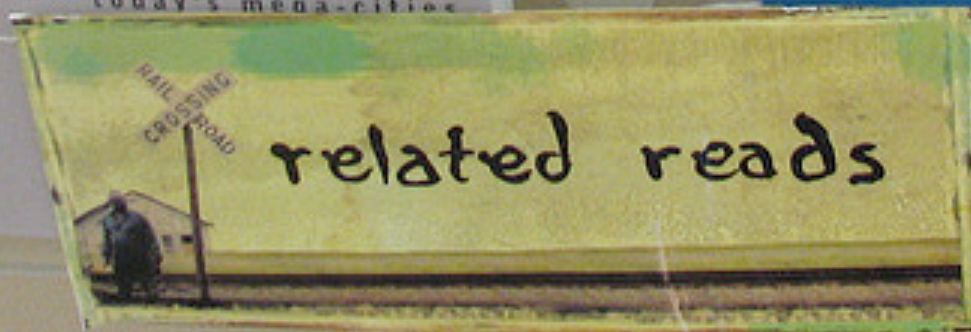


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## CRY OF THE URBAN POOR

Reaching the slums of  
today's mega-cities



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# CREATING A HABITAT FOR HUMANITY

No Hands but Yours



HAN T. M.

O, Habitat for

word by Jim



Books on homelessness and housing



# Engineers' data book

**Matthews, Clifford.**

Publisher: John Wiley,  
Publication date: 2004.  
ISBN: 9780470026984

1 copy on the shelves.

## Copy details

Shelf mark	No. of copies	Loan type	Location
620(083) MAT	1	Reference collection	Level 3 (see floorplan)

## Catalogue record

**ISBN:** 9780470026984 (pbk.)

**ISBN:** 0470026987 (pbk.) :

**Personal Author:** Matthews, Clifford.

**Title:** Engineers' data book / by Clifford Matthews.

**Edition:** 3rd ed.

**Publication info:** Chichester : John Wiley, 2004.

**Physical descrip:** xvii, 268 p. : ill. ; 17 cm.

**General Note:** Previous ed.: London: Professional Engineering, 2000.

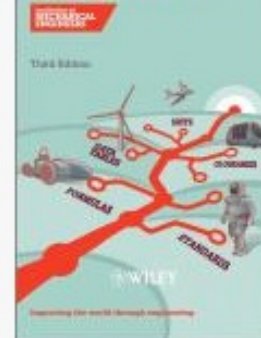
**General Note:** At head of title: IMechE.

**Bibliography note:** Includes bibliographical references.

**Abstract:** Providing concise and up-to-the-minute information for the mechanical engineer, this text covers the basic principles that underpin every engineering issue. It also includes data for conversions and engineering rules and information on risk-based techniques and assesement.

**Subject term:** Mechanical engineering Tables.

**Added corporate name:** Institution of Mechanical Engineers (Great Britain)



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**Bath copies**

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What's this?

# Music Online database

The screenshot displays the Music Online database interface. The top navigation bar includes links for Home, Browse, Advanced Search, Playlists, What's New, and Help. A search bar on the right contains the text 'Search: \_\_\_\_\_ in All' with a 'Go' button. Below the navigation bar, the page shows 'Search » Results' and a 'Sign in to save playlists' link. A 'Go to:' dropdown menu is set to 'Music Online'. The main content area displays 'Search Results: person=Stevens, Cat' with a note: 'Your search for person="Stevens, Cat" found 15 results. [Hide details](#)'. A list of search results follows, including '1. Person: Stevens, Cat (Composer)', '2. Album: Mona Bone Jakon performed by...', '3. Album: The Very Best Of Cat Stevens', '4. Album: Teaser And The Firecat', '5. Album: Chronicles performed by...', '6. Album: The Best Of Cat Stevens', '7. Album: Teaser And The Firecat', '8. Album: Wild World / Morning H...', and '9. Album: Gold performed by Stev...'. A large overlay window titled ': Send to mobile device' is positioned in the center. It instructs users to 'use one of the available options' to send content to a mobile device. Three options are provided: 'OPTION 1 ::' (email or SMS), 'OPTION 2 ::' (short link <http://goasp.it/jzmx>), and 'OPTION 3 ::' (QR code). A 'SEND' button is located at the bottom of the overlay. To the right of the overlay, a sidebar shows a 'By' dropdown menu and a list of 'Recordings'.

<http://crln.acrl.org/content/71/10/526/F4.large.jpg>









The University of Alabama College of Human Environmental Sciences welcomed alumni and friends for homecoming festivities with this QR code placed on a sign at Doster Hall.

[http://blog.al.com/live/2010/10/alabama\\_homecoming\\_moody\\_racism.html](http://blog.al.com/live/2010/10/alabama_homecoming_moody_racism.html)

# The level of student engagement with QR Codes



## Level of student engagement with QR Codes: A cross institutional study

Posted by Andy Ramsden in [Uncategorized](#)

1 Comment »

I've just written up the findings from the cross institutional study on student engagement with QR Codes. This covered students at the University's of Bath, Gloucestershire, Leicester and Sheffield.

13

tweets

[retweet](#)

Report available from: <http://opus.bath.ac.uk/19974/>

The intention was to answer the following questions; Do students know what a QR Code is? Have they accessed a QR Code on their mobile device? How appealing are QR Codes for entering mobile information? Would students access learning materials on their mobile phones?

The findings will help inform the appropriate design for effective QR Code based learning activities and campus tours.

The findings suggest, when compared to the results of a previous survey; students are becoming more aware of QR Codes, more students have experienced scanning a QR Code on their device, they find the use of QR Codes to access information very appealing compared to manual entry of information on their phone, and they are not enthusiastic to spend their own money on accessing learning materials on their mobile phones and would prefer to access them on a computer

<http://blogs.bath.ac.uk/qrcode/>





Cookery

UNIVERSITY OF  
TECHNOLOGY SYDNEY

## UTS:Library QR Codes

WWW.LIB.UTS.EDU.AU  
UTS:LIBRARY

Scan this UTS:Library QR Code using the camera on your mobile phone!

Go on, try it out now!

Not sure how? Check out the instructions at the bottom of the page...



To learn all about...

## Express Catalogues



## WHAT IS A QR CODE?

- A QR code is a barcode that can hold lots of information.
- It can be scanned by the camera in a mobile device.
- It can lead you to websites, contact details, videos, quizzes, PDFs, demonstrations, slides and more.

## GETTING STARTED

- Does your phone have wifi capability and a camera?
- Connect to UTS wireless network for free wifi\* access while on campus "UTS-WPA"
- Download a QR code reader.
- Visit <http://iftagtag.com/getqr> to see which QR code reader is right for your phone.
- On campus we have access to free wifi but if you're somewhere that doesn't have free wifi beware of data charges from your phone provider.

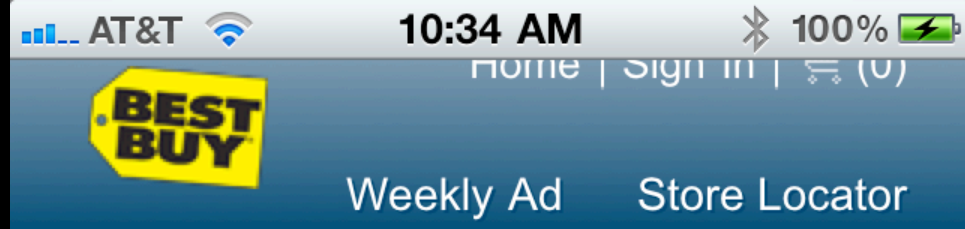
[http://www.flickr.com/photos/angels\\_have\\_the\\_phone\\_box/4928432752/](http://www.flickr.com/photos/angels_have_the_phone_box/4928432752/)



# Even at Best Buy



<http://highedwebtech.com/2010/09/06/qc-codes-everywhere-but-higher-ed/>



## Samsung - 32" Class / 1080p / 60Hz / LCD HDTV

Model: LN32C530F1F | SKU: [9775416](#)



**Shipping:** Usually leaves our warehouse in 1 business day

**Store Pickup:**

[Find in store](#)



Enlarge



E-mail Details



Text Details



Compare

ENERGY STAR Qualified

Financing and special offers are available. Check full site for details.

On Sale

reg \$599.99

**\$529.99**

ADD TO CART



## Art

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The field of art encompasses both art history and studio art, as well as related fields such as photography, architecture, graphic design, and interior design. This guide is geared toward those researching a particular artist or artistic movement, and offers a starting point for further study.

- Please give us feedback on the 10/14/10 library session for ART 387: [infoguides.sdsu.edu/quiz/quiz.php](http://infoguides.sdsu.edu/quiz/quiz.php)

### Subject guide content

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- [Special Collections](#)

### Research assistance

[Laurel Bliss](#)  
Fine Arts Librarian  
Office: Love Library Addition 1101E  
Phone: (619) 594-4446  
[lbliss AT rohan DOT sdsu DOT edu](mailto:lbliss@rohan.sdsu.edu)

Reference Desk  
General Research Assistance  
Location: 1st Floor Library Addition  
Phone: (619) 594-6728  
[eref AT rohan DOT sdsu DOT edu](mailto:eref@rohan.sdsu.edu)

Special Collections and University Archives  
Special Collections Research Assistance  
Location: 4th Floor Library Addition

### Go Mobile



[About QR Codes](#)

### Suggest a resource

<http://www.flickr.com/photos/ryersonlibrary/5039468125/>



MISSED THE  
LIBRARY  
TOUR?  
**NO PROBLEM!**  
TAKE THE  
AUDIO TOUR  
ONLINE!





# And those flashcards...



<http://lifehacker.com/5608617/use-qr-codes-for-flashcards-you-cant-cheat-on>

# QR code shortcomings

- Tracking
  - Cannot keep stats on who scans, so interaction has to pass through another layer (webpage)
- Limited reach
  - A majority of people are unfamiliar with QR codes and do not know if their phones can read them
  - Increased use in marketing may help bolster awareness
- Doesn't work for the visually impaired



# Things to keep in mind

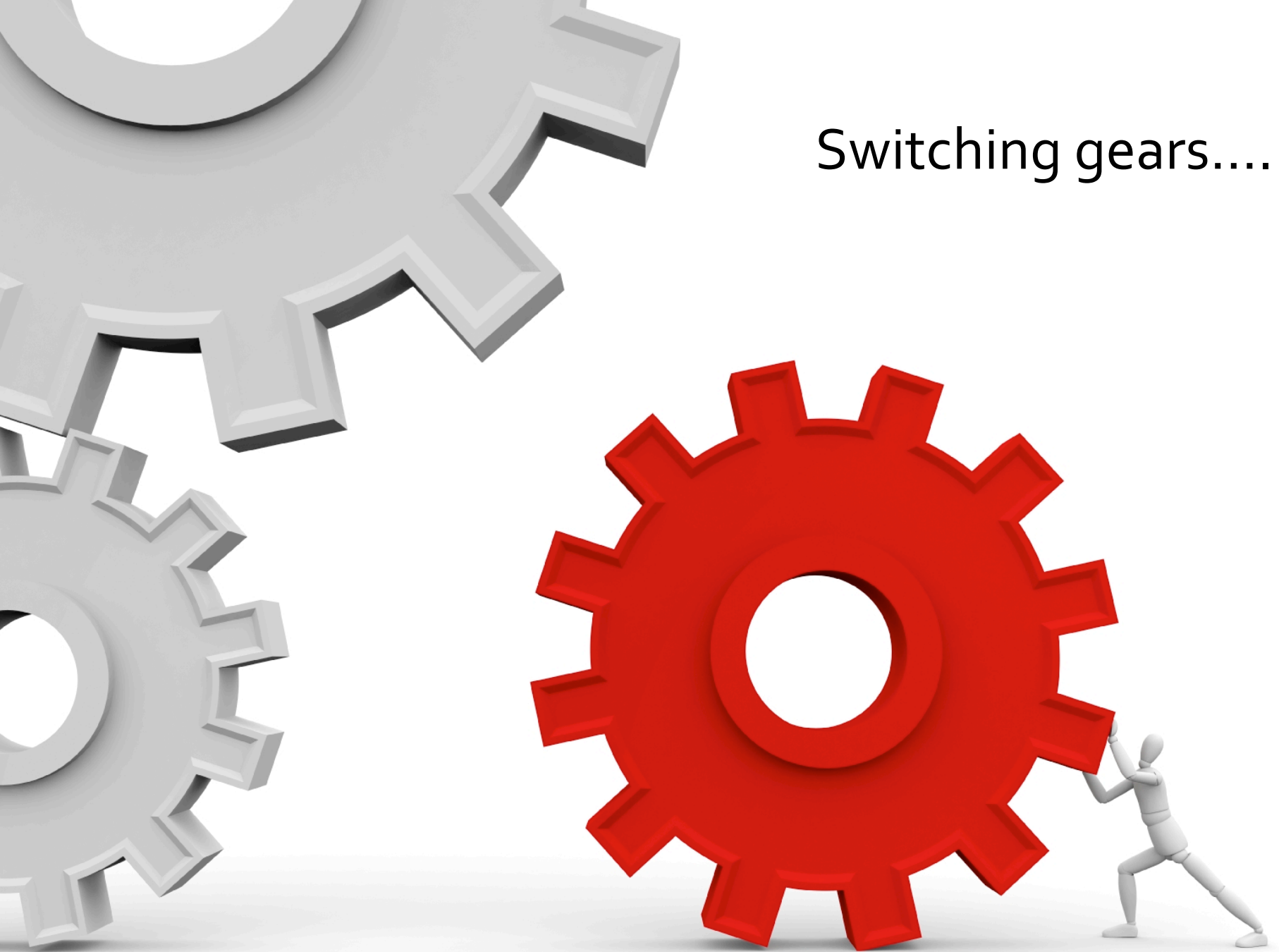
---

- Are you linking to mobile-friendly content?
  - And does it play nicely with multiple devices?
- Code Overload

# How do I scan a QR code?

- Step 1:** Get a smartphone.
- Step 2:** Install a barcode scanner app if you don't already have one.
- Step 3:** Take a picture of the QR code using the barcode scanner app.
- Step 4:** Watch what happens. 😊

Switching gears....



# What is augmented reality?

“Augmented reality (AR) is a term for a live direct or indirect view of a physical real-world environment whose elements are *augmented* by virtual computer-generated sensory input such as sound or graphics.”

- Wikipedia

# In other words...

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- It's a technology that enhances your current perception of reality

## Augmented Reality

- combines real and virtual
- is interactive in real time
- is registered in 3D

# Terminator vision!

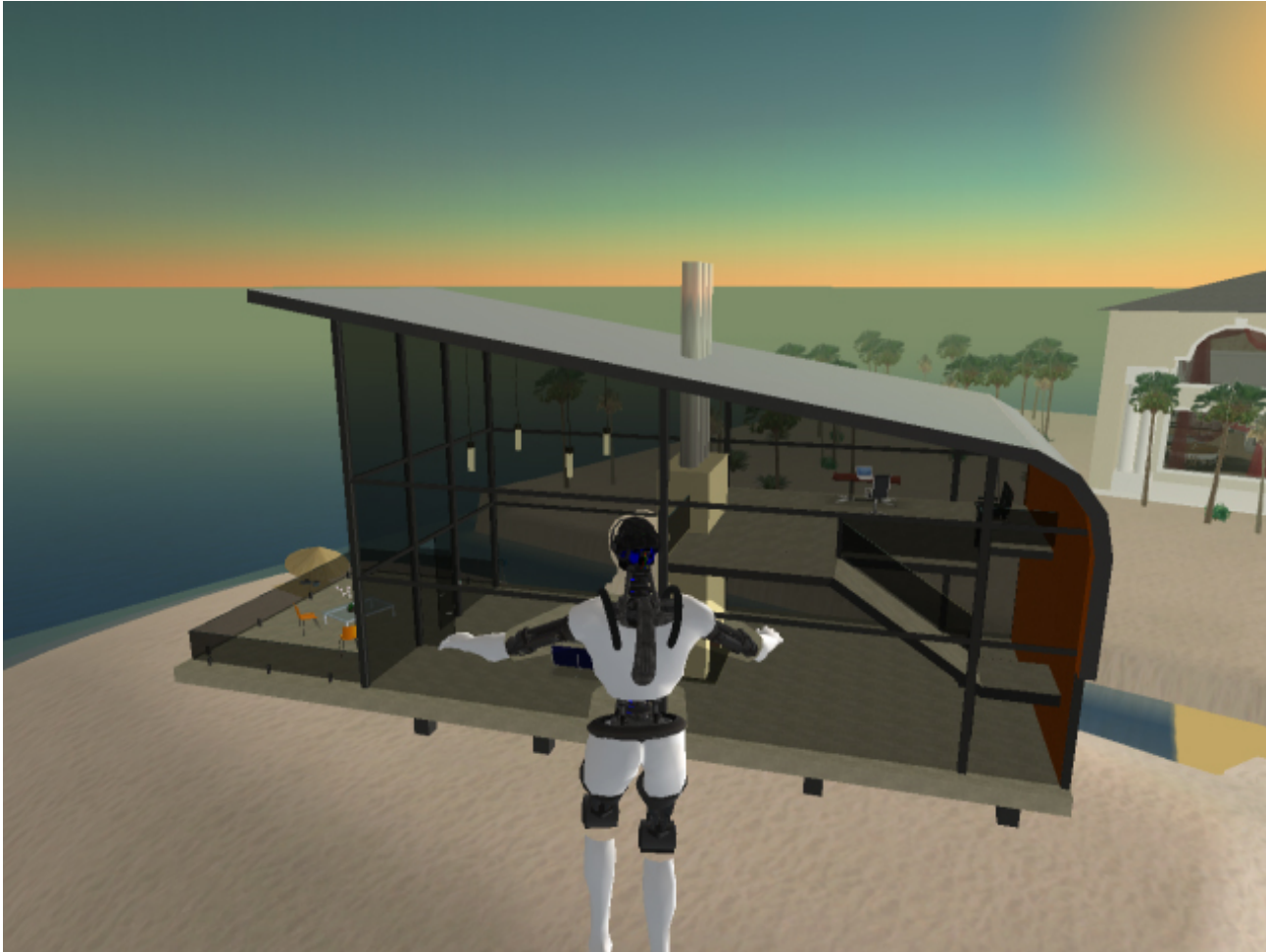


# What is augmented reality?

---

[http://commoncraft.com/  
augmented-reality-video](http://commoncraft.com/augmented-reality-video)

# It's not VIRTUAL reality





# Augmented football



# Augmented hockey



# Augmented baseball cards

---

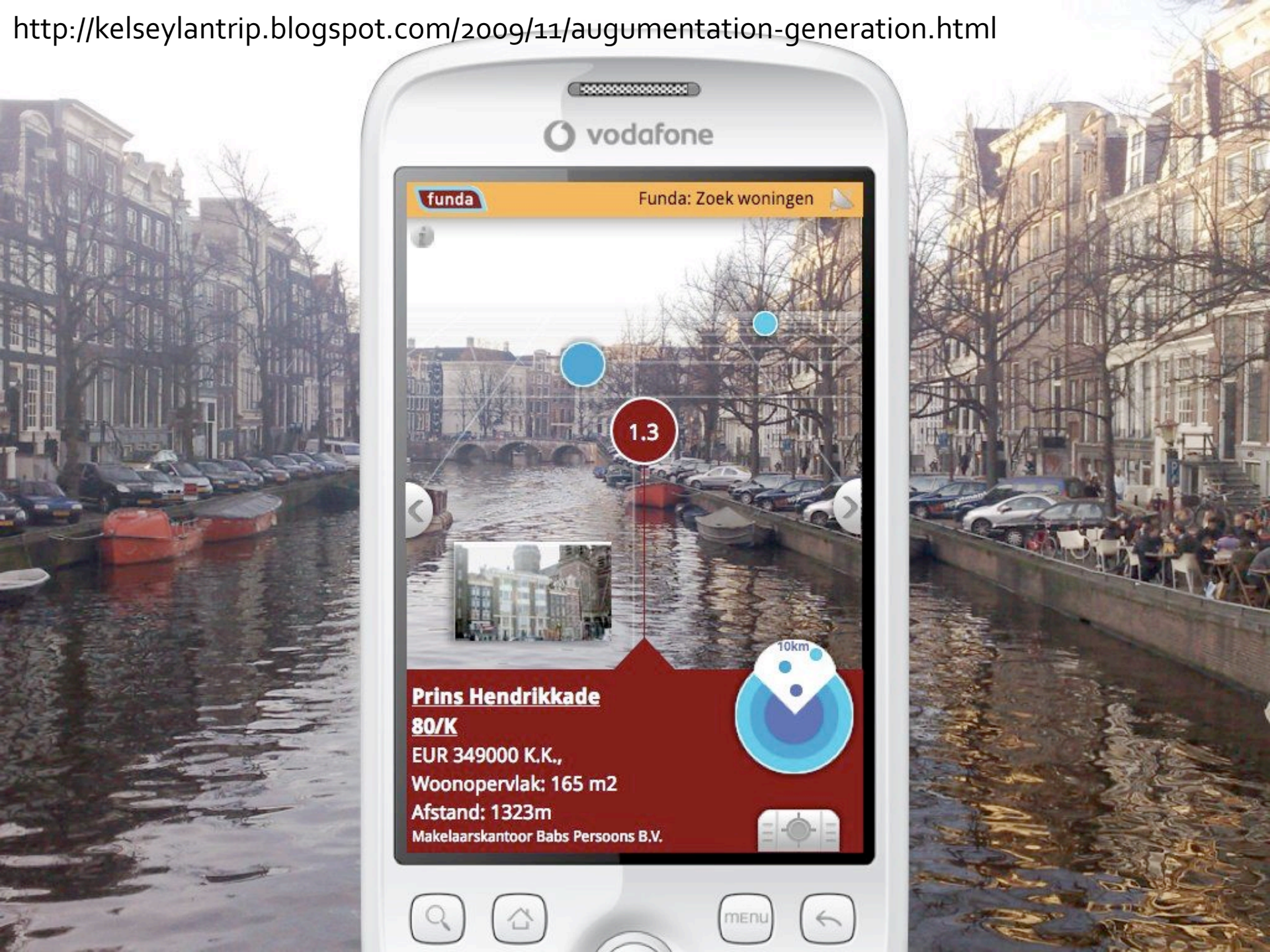
[http://www.youtube.com/watch?  
v=YDpCcrF6yFI](http://www.youtube.com/watch?v=YDpCcrF6yFI)



# Augmented surroundings







vodafone

funda

Funda: Zoek woningen

1.3



**Prins Hendrikkade**

**80/K**

EUR 349000 K.K.,

Woonopervlak: 165 m2

Afstand: 1323m

Makelaarskantoor Babs Persoons B.V.

10km

# Augmented sky



# Why AR?

- 2010 Horizon Report:
  - “Market projections for augmented reality on mobile devices predict revenues of \$2 million in 2010, rising to several hundred million by 2014 (\$350 million, according to ABI Research; Juniper Research’s projections are even higher). Augmented reality is poised to enter the mainstream in the consumer sector, and the social, gaming, and location-based applications that are emerging point to a strong potential for educational applications in the next few years.”



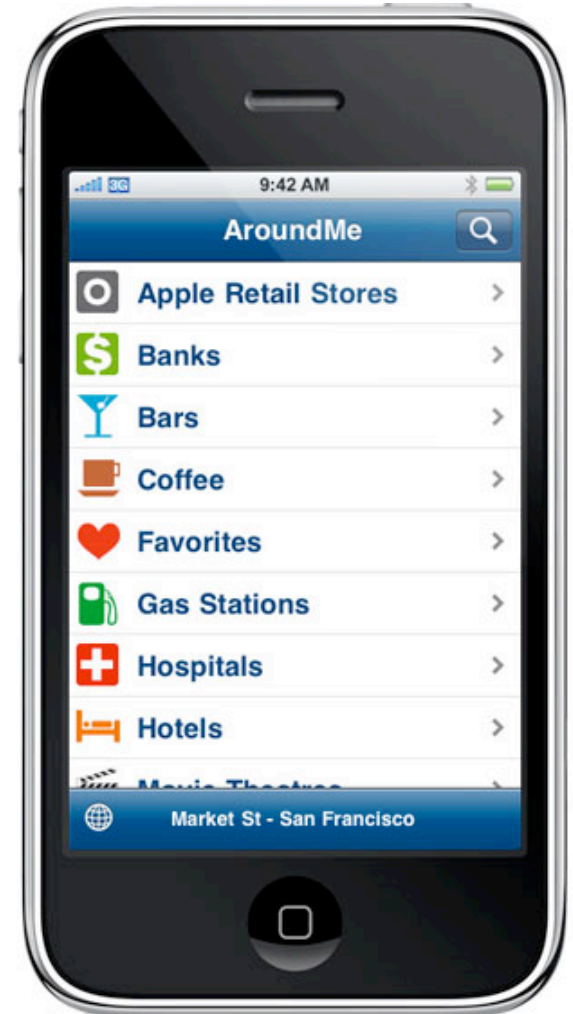
# Potential AR applications

<b>Enhanced Maps</b>	To help people find their way around campus, see building hours, etc.
<b>Historical / Cultural Tours</b>	To provide context for historically / culturally significant locations, etc.
<b>Training</b>	To provide relevant information at point of need; as a simulator to reduce consequences of training mistakes.
<b>Learning Games</b>	Rich, realistic games to support experiential learning.
<b>Encouraging Conversation</b>	To see what people are tweeting about, reviewing, etc.; annotating the physical environment.
<b>"X-Ray Vision"</b>	To expose the inner workings of complex systems such as mechanical devices, the human body, etc.
<b>3D Modeling</b>	To model architectural designs, etc.



# Tools and examples

- Yelp “Monocle”
- Wikitude
- Around Me
  - ATMs, bars, coffee, gas stations, etc
- Layar App/Browser
  - Can build your own
  - Browse 400+ layers
  - Many Universities using

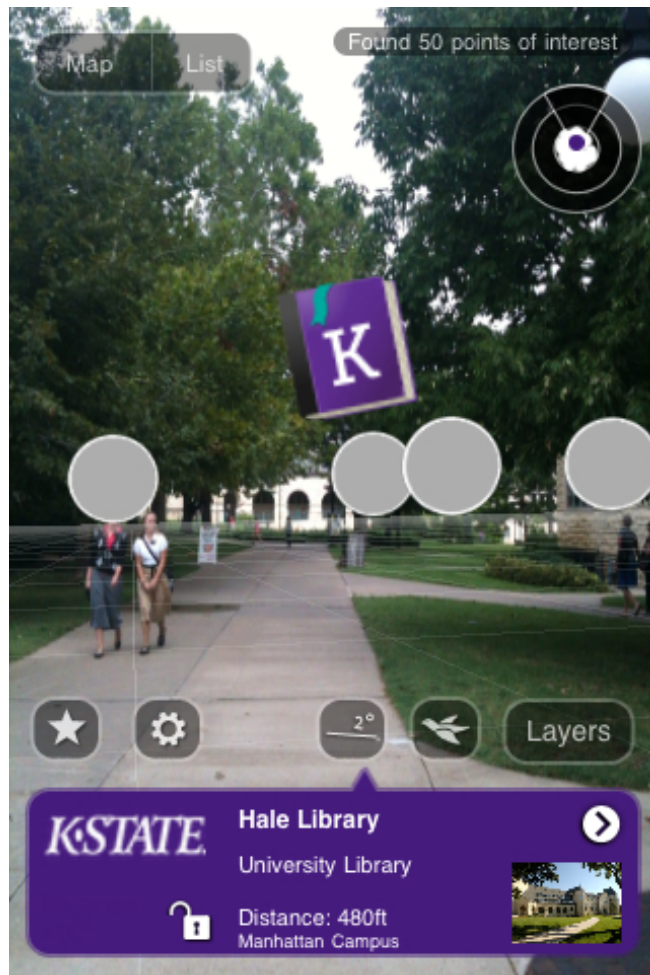


# Imagine it in on campus...

---

Augmented reality  
can make a connection between the  
*physical institution*  
surrounding you and the  
*virtual institution*  
on the web

# Layar at Kansas State



<http://kstatenews.org/wp-content/uploads/kstatenews.org/2010/09/powercat-enhanced.jpg>

<http://cdn-3.androidzoom.com/screenshots/120375-2.jpg>

# Layar at Kansas State

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[http://www.youtube.com/watch?  
v=GS\\_uz4uMNJo&feature=player\\_embedded](http://www.youtube.com/watch?v=GS_uz4uMNJo&feature=player_embedded)

# Connecting past and present

---

Augmented reality can make a connection between the *present day* and *historical events* or highlight *cultural significance*

# CultureClic





# CultureClic

---

[http://www.youtube.com/watch?  
v=XtJ1ZrPu-oo&feature=player\\_embedded](http://www.youtube.com/watch?v=XtJ1ZrPu-oo&feature=player_embedded)

# NCSU's WolfWalk

## WolfWalk

### Explore NC State history right on your phone

WolfWalk allows you to explore North Carolina State University's campus history on your phone. WolfWalk has information on 90 different sites on campus, with images that trace the site's history, courtesy of the [NCSU Libraries Special Collections Research Center](#). WolfWalk will also show you information about the sites closest to you, depending on the capabilities of your phone.



Get WolfWalk  
for iPhone



Visit WolfWalk  
Mobile Web

### Send WolfWalk to my phone

Select provider...

999-999-9999

Send Text Message

We will not store or share your number. Sending messages is free, but your mobile provider may charge you to receive messages. Please check with your provider for details.

### Need support? Have a suggestion for us?

If you have any questions about WolfWalk or have suggestions for us, send a message to [wolfwalk@lists.ncsu.edu](mailto:wolfwalk@lists.ncsu.edu).

### Explore more NC State history

To find out more about NC State's history, visit [Historical State](#). Historical State is the home of our comprehensive catalog of historical images of NC State, and contains all of the images used in WolfWalk. Historical State also features course catalogs, and a near-complete run of the *Agromeck*, NC State's yearbook.



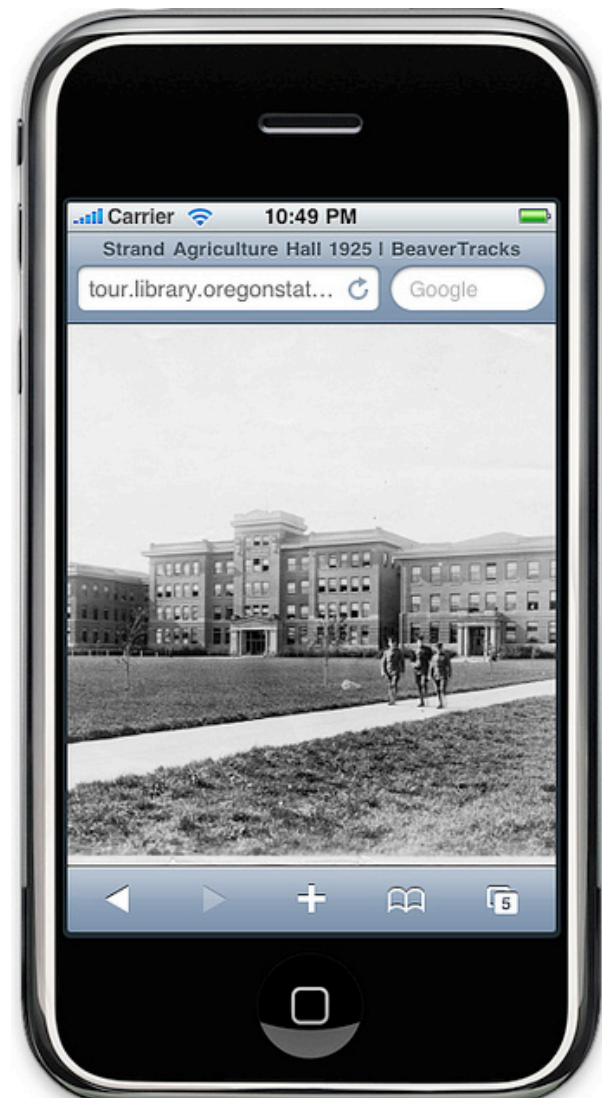
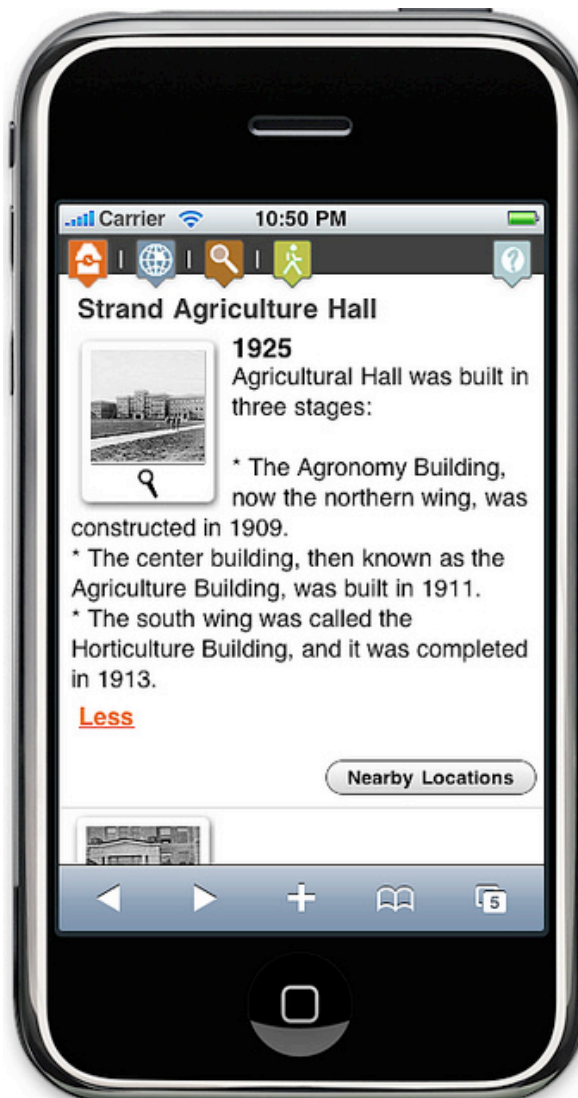
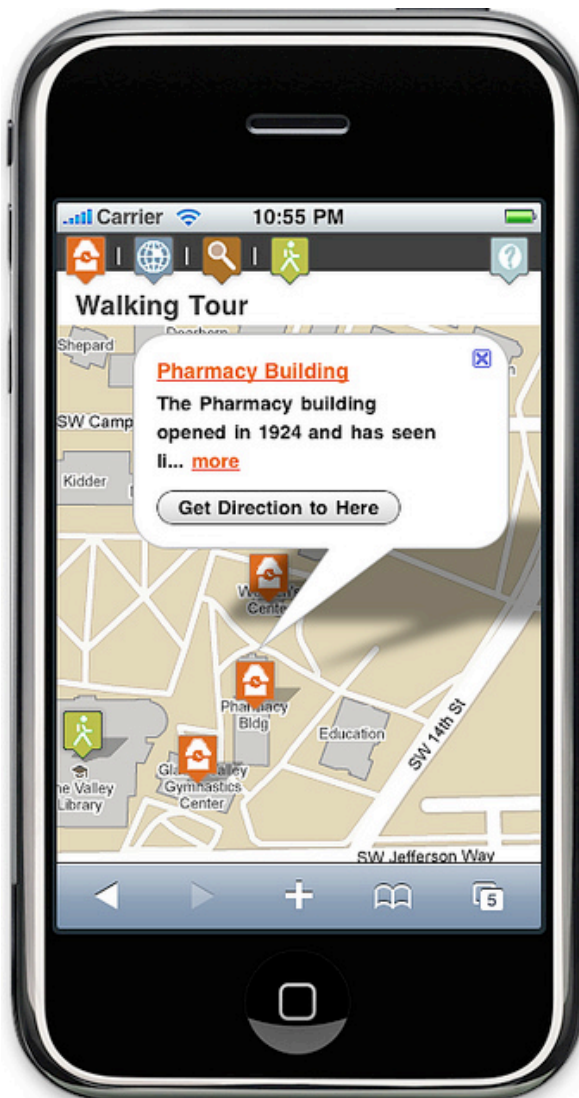
# Screenshots from WolfWalk



# OSU's BeaverTracks

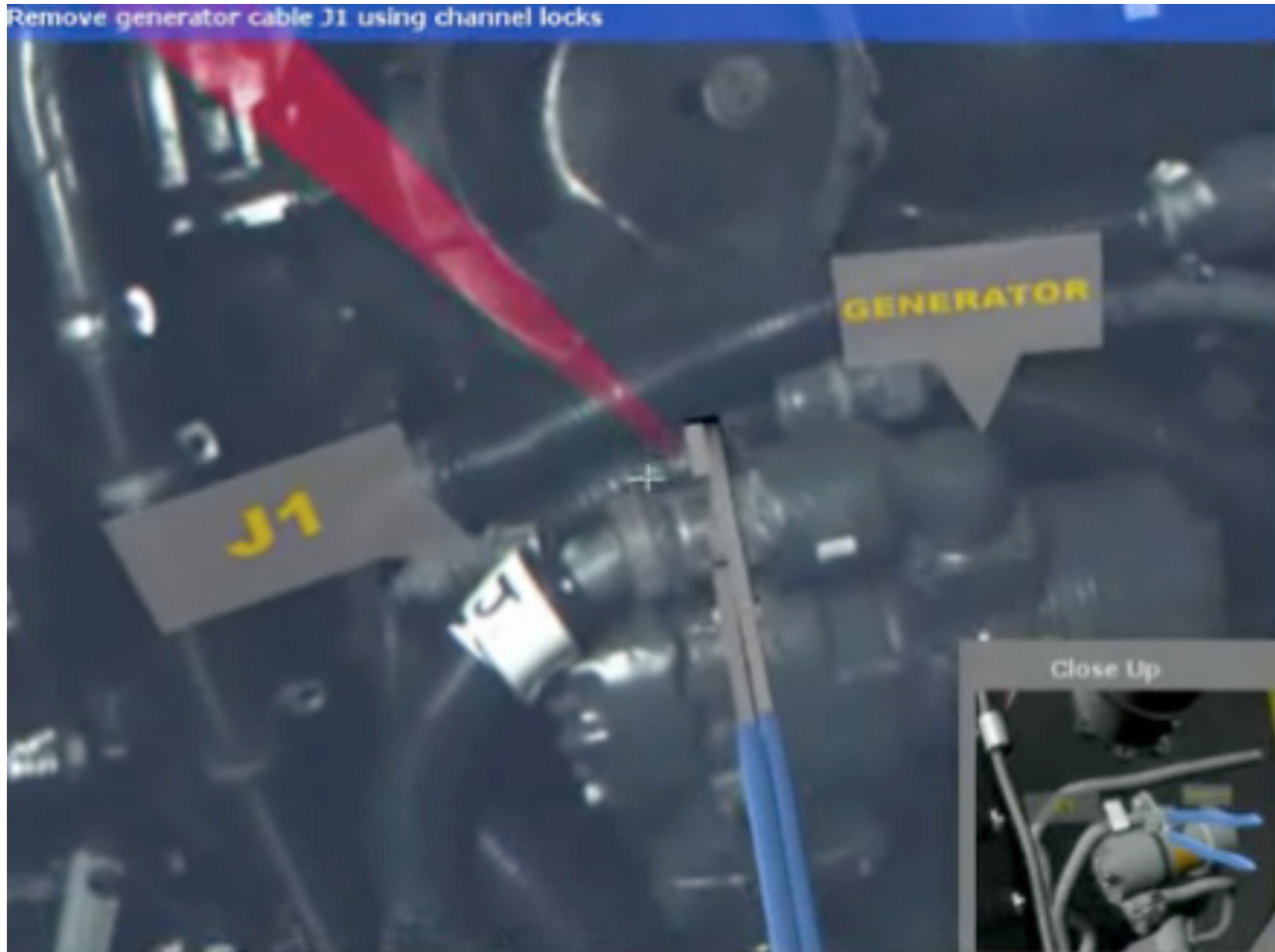
- BeaverTracks is an interactive mobile guide and walking tour of Oregon State University's historical locations.
- At each of the 22 locations, you get a brief history and can browse a catalog of historic images.
- Depending on your mobile device you can also take a walking tour of the historic sites.

# Screenshots from BeaverTracks





# U.S. Marines' ARMAR





# ARIS – U. Wisconsin



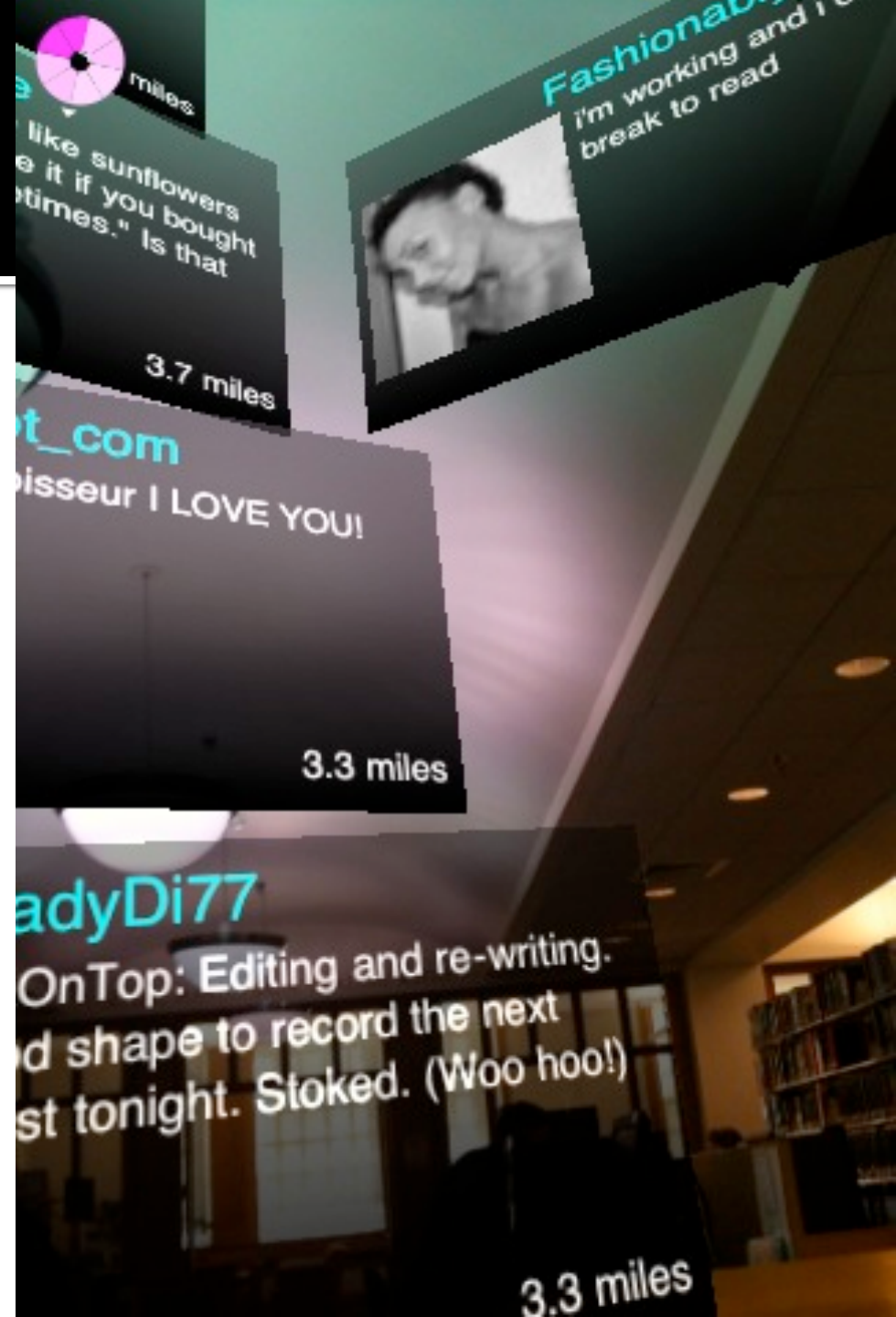
**STEEL**  
Mining and Smelting in 1867

“STEEL is a simple game about mining and smelting metals. A number of virtual mines (copper, iron and carbon) are located all around downtown Madison, and players collect the metals for profit.”

# MIT Teacher Education Program

- Environmental Detectives: students play the role of environmental engineers who are presented with the following scenario at the beginning of the simulation:
  - *During the construction of the underground garage of the new Stata Center (a big and controversial construction project) significant amounts of water are pumped up from the ground in order to lower the groundwater table so that the garage can be constructed in a dry environment. As a matter of regulation the water is tested for the 25 most commonly found chemicals in groundwater at hazardous waste sites. As a result of the testing it is discovered that a toxin is present in the extracted water. You call the President of the University to report and he asks, "How dangerous is this toxin? Where did the contamination come from and how widespread is it? Does MIT need to take some action (and what action might this be)? What do you advise?" You promise to call him back within three hours with your advice on the problem.*

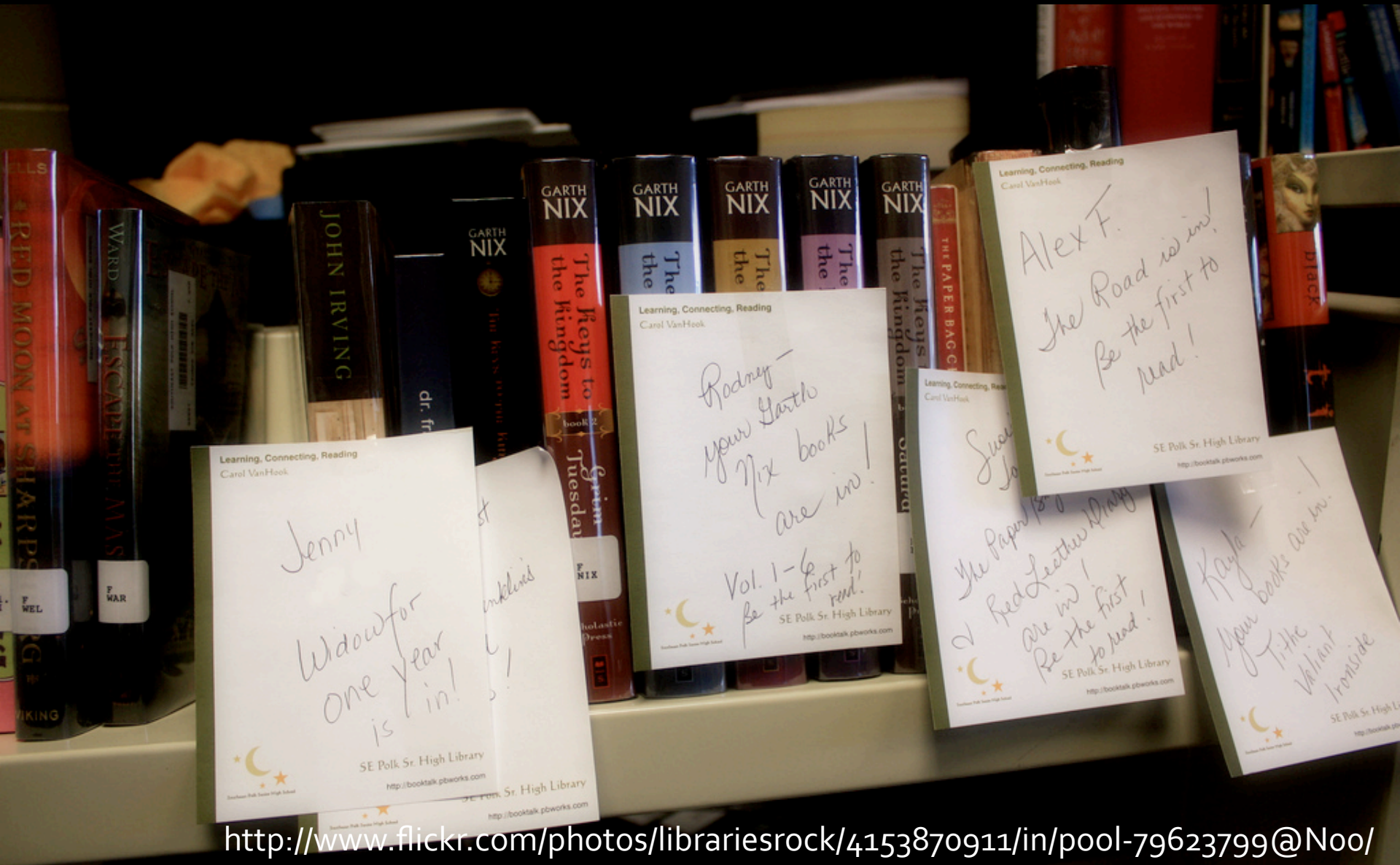
# Nearby Tweets



[http://www.flickr.com/photos/lauren\\_pressley/4287888853/](http://www.flickr.com/photos/lauren_pressley/4287888853/)



# Leaving helpful notes





# Augmented anatomy



# Nestor – 2D to 3D

[http://www.youtube.com/watch?  
v  
=M4qZoGLO5\\_A&feature=player\\_embedded](http://www.youtube.com/watch?v=M4qZoGLO5_A&feature=player_embedded)

# Additional Resources

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Wikipedia overviews

- [http://en.wikipedia.org/wiki/QR\\_Code](http://en.wikipedia.org/wiki/QR_Code)
- [http://en.wikipedia.org/wiki/Augmented\\_reality](http://en.wikipedia.org/wiki/Augmented_reality)
- [http://wik.ed.uiuc.edu/index.php/Augmented\\_Reality\\_in\\_Education](http://wik.ed.uiuc.edu/index.php/Augmented_Reality_in_Education)

# Thank you!

**Rachel Vacek**

Head of Web Services  
University of Houston Libraries

**Email:** [vacekrae@gmail.com](mailto:vacekrae@gmail.com)

**Anita Riley**

Digital & Web Projects Fellow  
University of Houston Libraries

**Email:** [anita.riley@gmail.com](mailto:anita.riley@gmail.com)

**Presentation available online:**  
[slideshare.net/anitazavrrr](https://slideshare.net/anitazavrrr)

