

Design and prototyping II

CS4784: HCI Capstone

Virginia Tech

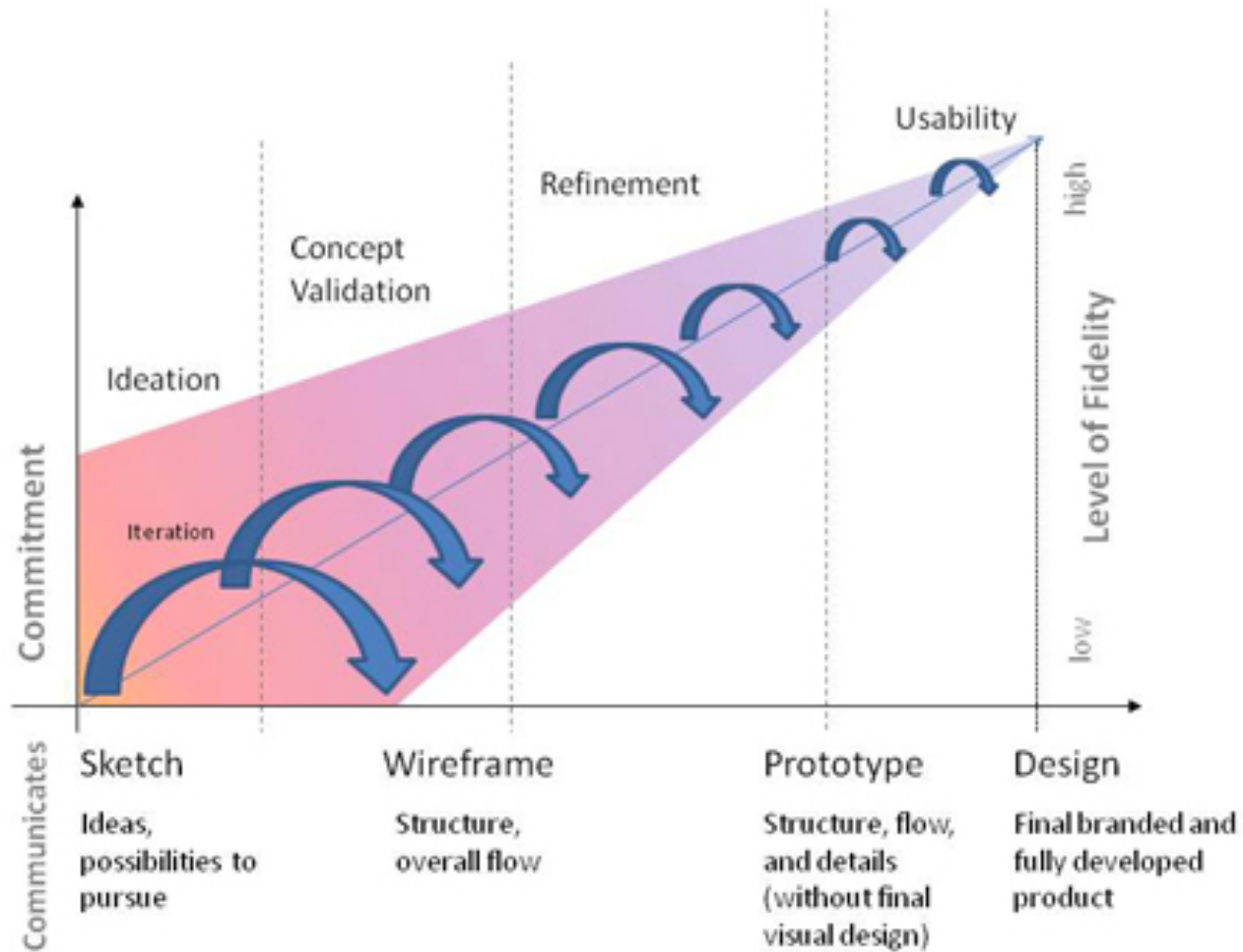
Instructor: Dr. Kurt Luther

Prototyping

- Vs. sketching
- Serial vs. parallel
- Low vs. high-fidelity
- Physical prototypes
- Wizard of Oz

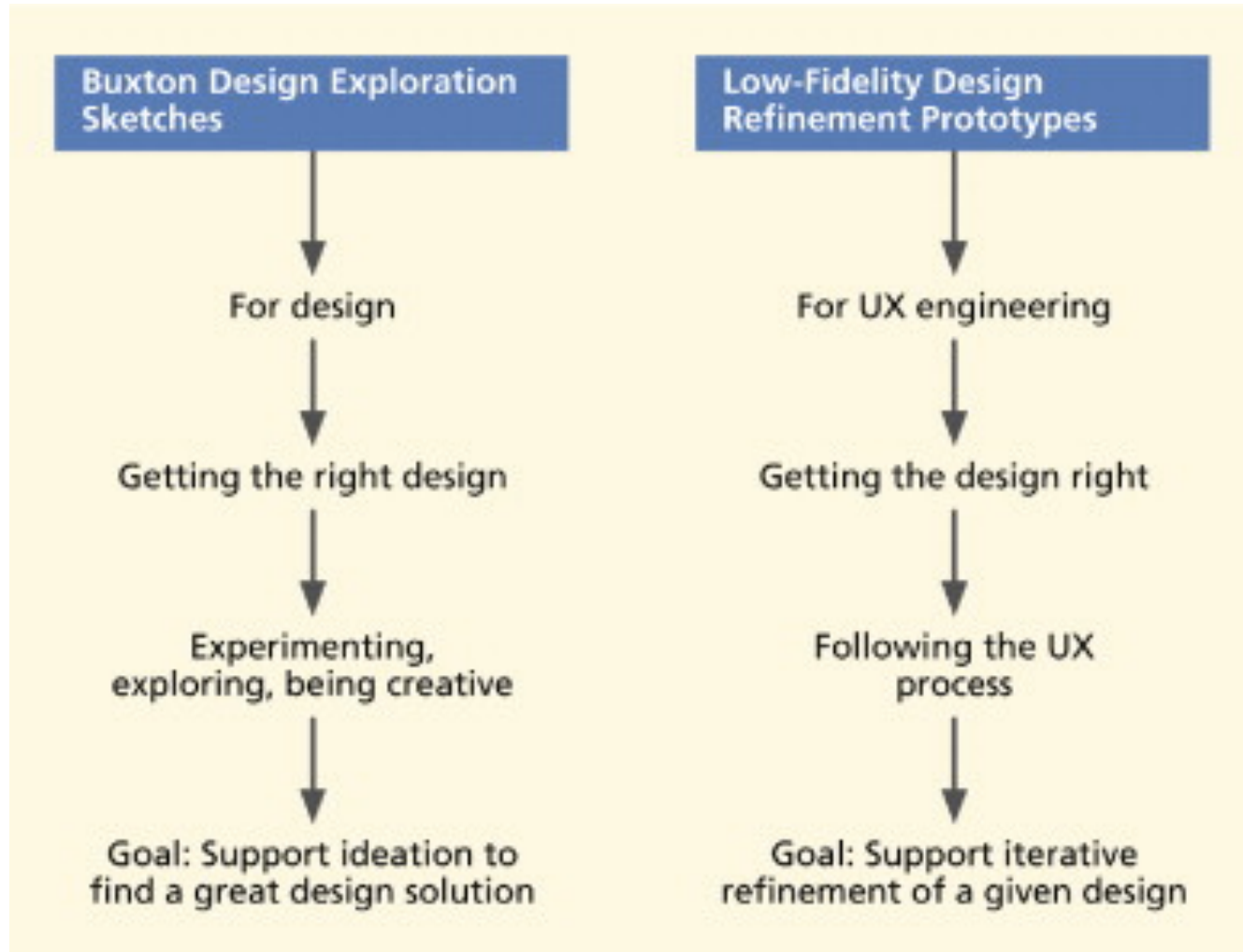
[List of UI prototyping tools](#)

From sketches to “finished” design



From Traci Lepore

Sketching vs. prototyping



Serial vs. parallel prototyping

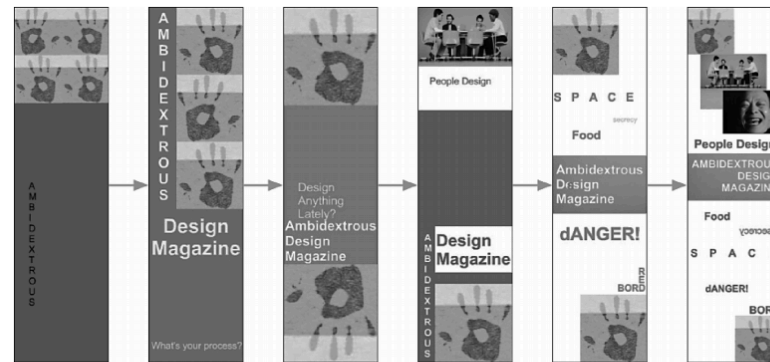
- Which yields more effective, creative designs?

Serial prototyping

or

Parallel prototyping

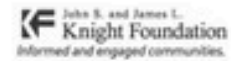
From Dow et al., “Parallel prototyping...,” ToCHI 2010



Low-fidelity prototypes

- A.k.a. “wireframes”
- Goals
 - Connect information architecture to visual design
 - Determine functionality of each UI
 - Prioritize space for content
 - Establish consistency and patterns
- Avoid
 - Colors, images, multiple fonts
- Be careful about showing these outside your team
- *UX Book* recommends paper for lo-fi prototypes

The Knight-Risser Prize for Western Environmental Journalism



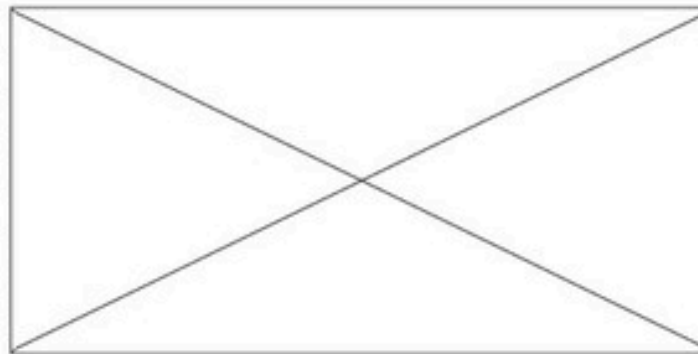
Sponsored by the John S. Knight Journalism Fellowship and
The Bill Lane Center for the American West, Stanford University

Follow us:



Search this site:

- Home
- About the Prize
- The Risser Legacy
- Symposium
- Winners
- Symposium
- Application
- Contact



Endowment Drive

\$260,000 Already pledged

\$40,000 Left to Raise

Support The Knight-Risser Prize: Donate Today

Tax-deductible donation

Lorem Ipsum Ombibus Sum

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo.

Nam lorem ligula, varius ac bibendum quis, laoreet eget arcu. Proin nec lectus ut metus dignissim pellentesque. Aliquam erat volutpat. Aliquam id viverra mauris. Aliquam metus augue, faucibus in imperdiet porta, tempus a sapien. Sed justo diam, ullamcorper sed porttitor eget, consequat nec elit. Quisque consectetur tempus risus eget aliquet. Sed mollis malesuada est a gravida. Aenean varius, justo in fermentum viverra, ipsum felis elementum metus, quis lacinia purus risus vel nibh. Aliquam sit amet cursus diam. Mauris blandit, tortor sit amet sodales aliquet, velit augue volutpat mi, a scelerisque ante ante id purus.

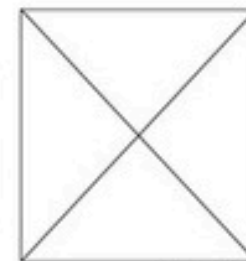
Quisque tempor, augue viverra adipiscing scelerisque, libero purus dignissim nunc, venenatis vehicula lorem tellus at nisi. Donec eu ornare odio. In dictum tempor eros, eu varius orci facilisis id. Vestibulum lacinia, libero ac scelerisque sodales, augue arcu aliquet urna, imperdiet pulvinar enim leo ut nisi. Vestibulum egestas augue quam, eu placerat dui. Nunc elementum velit in mauris porta tristique. Nunc rhoncus dapibus

Quisque tempor, augue viverra adipiscing scelerisque, libero purus dignissim nunc, venenatis vehicula lorem tellus at nisi. Donec eu ornare odio. In dictum tempor eros, eu varius orci facilisis id. Vestibulum lacinia, libero ac scelerisque sodales, augue arcu aliquet urna, imperdiet pulvinar enim leo ut nisi. Vestibulum egestas augue quam, eu placerat dui. Nunc elementum velit in mauris porta tristique. Nunc rhoncus dapibus scelerisque.

Cras facilisis luctus imperdiet. Sed egestas ante hendrerit nibh egestas rhoncus. Morbi vitae eros eget leo adipiscing vulputate. Praesent eu justo sagittis tortor tempus malesuada eget quis orci. Duis eget lorem tellus. Mauris lobortis tincidunt tristique. Quisque augue tellus, adipiscing id bibendum semper, aliquet sit amet necque. Pellentesque a sem at turris frinilla auctor. Suspend-

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis.

- JAMES V. RISSER



Credit: DDFGG

Nam eget justo velit. Donec volutpat hendrerit lacus, quis hendrerit sem lectus id.

CALENDAR

OCT 22 2010
Risser Prize Symposium
Stanford University
[More Information...](#)

MAR 15 2011
Application Deadline
for Stories Posted
During Calendar 2010
[More Dates...](#)

Tweets [Follow](#)

Knight-Risser 22 Jan

From Mara Behrens

Quisque tempor, augue viverra adipiscing scelerisque, libero purus dignissim nunc, venenatis vehicula lorem tellus at nisi. Donec eu ornare odio. In dictum tempor eros, eu varius orci facilisis id. Vestibulum lacinia, libero ac scelerisque sodales, augue arcu aliquet urna, imperdiet pulvinar enim leo ut nisi. Vestibulum egestas augue quam, eu placerat dui. Nunc elementum velit in mauris porta tristique. Nunc rhoncus dapibus scelerisque.

Cras facilisis luctus imperdiet. Sed egestas ante hendrerit nibh egestas rhoncus. Morbi vitae eros eget leo adipiscing vulputate. Praesent eu justo sagittis tortor tempus malesuada eget quis orci. Duis eget lorem tellus. Mauris loboeris tincidunt tristique. Quisque augue tellus, adipiscing id bibendum semper, aliquet sit amet neque. Pellentesque a sem at turpis fringilla auctor. Suspendisse potenti. Vestibulum fermentum libero quis quam euismod non condimentum diam scelerisque. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. In consequat mi ut felis sodales ac eleifend nunc bdit.

Quisque tempor, augue viverra adipiscing scelerisque, libero purus dignissim nunc, venenatis vehicula lorem tellus at nisi. Donec eu ornare odio. In dictum tempor eros, eu varius orci facilisis id. Vestibulum lacinia, libero ac scelerisque sodales, augue arcu aliquet urna, imperdiet pulvinar enim leo ut nisi. Vestibulum egestas augue quam, eu placerat dui. Nunc elementum velit in mauris porta tristique. Nunc rhoncus dapibus scelerisque.

Cras facilisis luctus imperdiet. Sed egestas ante hendrerit nibh egestas rhoncus. Morbi vitae eros eget leo adipiscing vulputate. Praesent eu justo sagittis tortor tempus malesuada eget quis orci. Duis eget lorem tellus. Mauris loboeris tincidunt tristique. Quisque augue tellus, adipiscing id bibendum semper, aliquet sit amet neque. Pellentesque a sem at turpis fringilla auctor. Suspendisse potenti. Vestibulum fermentum libero quis quam euismod non condimentum diam scelerisque. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. In consequat mi ut felis sodales ac eleifend nunc bdit.



Credit: D0SFGG
Nam eget justo velit. Donec volutpat hendrerit lacus, quis hendrerit sem lectus id.

Tweets [Follow](#)

Knight-Risser Prize @KnightRisser
Celebrate the best

western US, Canada, Mexico - enter your 2013 stories by March 15: knightrisser.stanford.edu
[Expand](#)

Matt Weiser @matt_weiser
RT @tomspiac: See where #WildlifeServices kills bobcats in CA. Sonoma County tops the list: bit.ly/1c56SiZ #USDA #wildlife

[Tweet to @KnightRisser](#)

PREVIOUS WINNERS OF THE KNIGHT-RISSER PRIZE

2009 Logging and Landslides: What Went Wrong The Seattle Times	2008 Climate Change Hits Home San Antonio Express-News	2007 Blighted Homeland The Los Angeles Times	2006 Squeezing Water from a Stone High Country News

[Home](#) [About](#) [Winners](#) [Symposium](#) [Entries](#) [Contact](#)

The Knight-Risser Prize for Western Environmental Journalism



John S. Knight Fellowships
450 Serra Mall
Building 120, Room 424
Stanford University
Stanford, CA 94305-2050

The Bill Lane Center for the American West
Jerry Yang & Akiko Yamazaki Environment & Energy Building
473 Via Ortega, Third Floor
Stanford University
Stanford, CA 94305-4225

(650) 723-4937 phone
(650) 725-6154 fax

(650) 721-1588 phone
(650) 721-3223 fax

knight-info@lists.stanford.edu info@west.stanford.edu

From Mara Behrens



TOUR

CUSTOMERS

NEW FEATURES

ENTERPRISE

BLOG

LOGIN

SIGN UP FREE

DESIGN BETTER EXPERIENCES FOR WEB & MOBILE

A Prototyping, Collaboration & Workflow Platform

GET STARTED – FREE FOREVER!



Balsamiq Mockups Demo



<https://vt.mybalsamiq.com/projects>

High-fidelity prototypes

- A.k.a. “mockups”
- Goals
 - Provide a representative (if limited) user experience
 - Develop visual design
 - Enable interaction and navigation
 - Allow for more realistic testing/feedback
- Materials (code, graphics, etc.) can often be reused during implementation
- Can mislead users/testers if too “perfect”

The Knight-Risser Prize for Western Environmental Journalism



Follow us:



Search this site...

- [Home](#)
- [About](#)
- [About The Prize >](#)
- [James V. Risser's Legacy >](#)
- [Endowment Drive >](#)
- [Winners](#)
- [Symposium](#)
- [Entry](#)
- [News](#)
- [Contact](#)
- [Calendar](#)

CALENDAR

- JAN 18 2014** Application forms available for 2013 entries [More Information...](#)
- FEB 5 2014** Knight-Risser Symposium: "Deadly Measures" [More Information...](#)
- MAR 15 2014** Entry Deadline for 2013 Work [More Information...](#)



Flickr: Alaskan Dude

Annual Prize and Symposium at Stanford University

Recognizing the best environmental journalism in the West. Exploring new ways to ensure that it thrives. The Knight-Risser Prize for Western Environmental Journalism.

The Knight-Risser Prize for Western Environmental Journalism recognizes excellence in reporting on environmental issues and stories in the North American West — from Canada through the United States to Mexico.

The prize is open to print, broadcast and online journalists, staffers and freelancers. The \$5,000 prize is awarded at the annual Knight-Risser Prize Symposium at Stanford University. The symposium brings together journalists, researchers, policy-makers, advocates, students, and the public to explore new ways to ensure that probing, creative, moving environmental journalism continues to thrive in a rapidly evolving journalism landscape.

Related: [Read about the environmental journalism legacy of James V. Risser](#)

The panel of judges for the prize includes journalists, scholars and scientists actively working in the American West. The deadline for entries is mid-March. Please check the [entry page](#) for details.

By recognizing the highest-quality environmental reporting about the North American West, the Knight-Risser Prize seeks to inspire journalists in all media to bring sophisticated reporting, solid environmental science, and compelling storytelling to the public, in the context of a rapidly evolving journalism landscape.

The annual Knight-Risser Prize Symposium seeks to forge active collaborative links between environmental research, education, journalism, and policy-making to enrich and support environmental journalism and make environmental research, scholarship and teaching relevant to the real world.

Please see our [winners page](#) for examples of some of the most inspiring environmental journalism in the West.

The Knight-Risser Prize is sponsored by the John S. Knight Journalism Fellowships and the Bill Lane Center for the American West at Stanford University, with support from the John S. and James L. Knight Foundation.

The John S. Knight Journalism Fellowships

The Knight Fellowships program annually brings 12 outstanding mid-career U.S. journalists and as many as nine journalists from other countries to study and work on

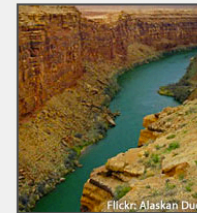
ENDOWMENT DRIVE:
Your contribution will be matched 2 to 1 by the Knight Foundation!

\$100,000 Already Pledged

\$0 Left to Raise

Support THE KNIGHT-RISSER PRIZE
Tax-deductible donation

The symposium brings together journalists, researchers, policy-makers, advocates, students, and the public to explore new ways to ensure that probing, creative, moving environmental journalism continues to thrive in a rapidly evolving journalism landscape.



Flickr: Alaskan Dude

Tweets

- Knight-Risser Prize** @KnightRisser
Celebrate the best environmental journalism in western US, Canada, Mexico - enter your 2013 stories by March 15: knightrisser.stanford.edu
Expand
- Matt Weiser** @matt_weiser
RT @tomsplace: See where

By recognizing the highest-quality environmental reporting about the North American West, the Knight-Risser Prize seeks to inspire journalists in all media to bring sophisticated reporting, solid environmental science, and compelling storytelling to the public, in the context of a rapidly evolving journalism landscape.

The annual Knight-Risser Prize Symposium seeks to forge active collaborative links between environmental research, education, journalism, and policy-making to enrich and support environmental journalism and make environmental research, scholarship and teaching relevant to the real world.

Please see our [winners page](#) for examples of some of the most inspiring environmental journalism in the West.

The Knight-Risser Prize is sponsored by the John S. Knight Journalism Fellowships and the Bill Lane Center for the American West at Stanford University, with support from the John S. and James L. Knight Foundation.

The John S. Knight Journalism Fellowships

The Knight Fellowships program annually brings 12 outstanding mid-career U.S. journalists and as many as nine journalists from other countries to study and work on innovative journalism at Stanford in a one-year program. More than 700 journalists have studied at Stanford under the program since it began in 1966. James Bettinger is director of the program. Dawn E. Garcia is deputy director. For more information, visit knight.stanford.edu.

The Bill Lane Center for the American West

The Bill Lane Center for the American West was established at Stanford in 2002. In 2005 it was endowed by L. W. "Bill" Lane Jr., former publisher of *Sunset* magazine. The Center is dedicated to advancing scholarly and public understanding of the past, present, and future of western North America. It supports research, teaching, and reporting about western land and life in the United States, Canada, and Mexico. For more information, visit west.stanford.edu.

The John S. and James L. Knight Foundation

The John S. and James L. Knight Foundation advances journalism in the digital age and invests in the vitality of communities where the Knight brothers owned newspapers. Since 1950, the foundation has granted more than \$400 million to advance quality journalism and freedom of expression. Knight Foundation focuses on projects that promote informed and engaged communities and lead to transformational change. For more information, visit www.knightfoundation.org.



Tweets Follow

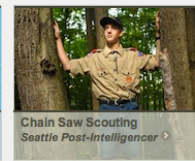
Knight-Risser Prize @KnightRisser
Celebrate the best environmental journalism in western US, Canada, Mexico - enter your 2013 stories by March 15: knightrisser.stanford.edu
Expand

Matt Weiser @matt_weiser
RT @tomsplace: See where #WildlifeServices kills bobcats in CA. Sonoma County tops the list: bit.ly/1cS6SIZ #USDA #wildlife
Retweeted by Knight-Risser Prize
Expand

Knight-Risser Prize @KnightRisser
"Deadly Measures" - very pleased to have @mufferaw, @srustCIR, Ngoc Nguyen from @NewAmericaMedia and Jay Hamilton of
Tweet to @KnightRisser

PREVIOUS WINNERS OF THE KNIGHT-RISSER PRIZE

[VIEW ALL WINNERS »](#)



[HOME](#) [ABOUT](#) [WINNERS](#) [SYMPOSIUM](#) [ENTRIES](#) [CONTACT](#)

The Knight-Risser Prize for Western Environmental Journalism



John S. Knight Fellowships
450 Serra Mall
Building 120, Room 424
Stanford University
Stanford, CA 94305-2050

(650) 723-4937 phone
(650) 725-6154 fax

<http://knight.stanford.edu>

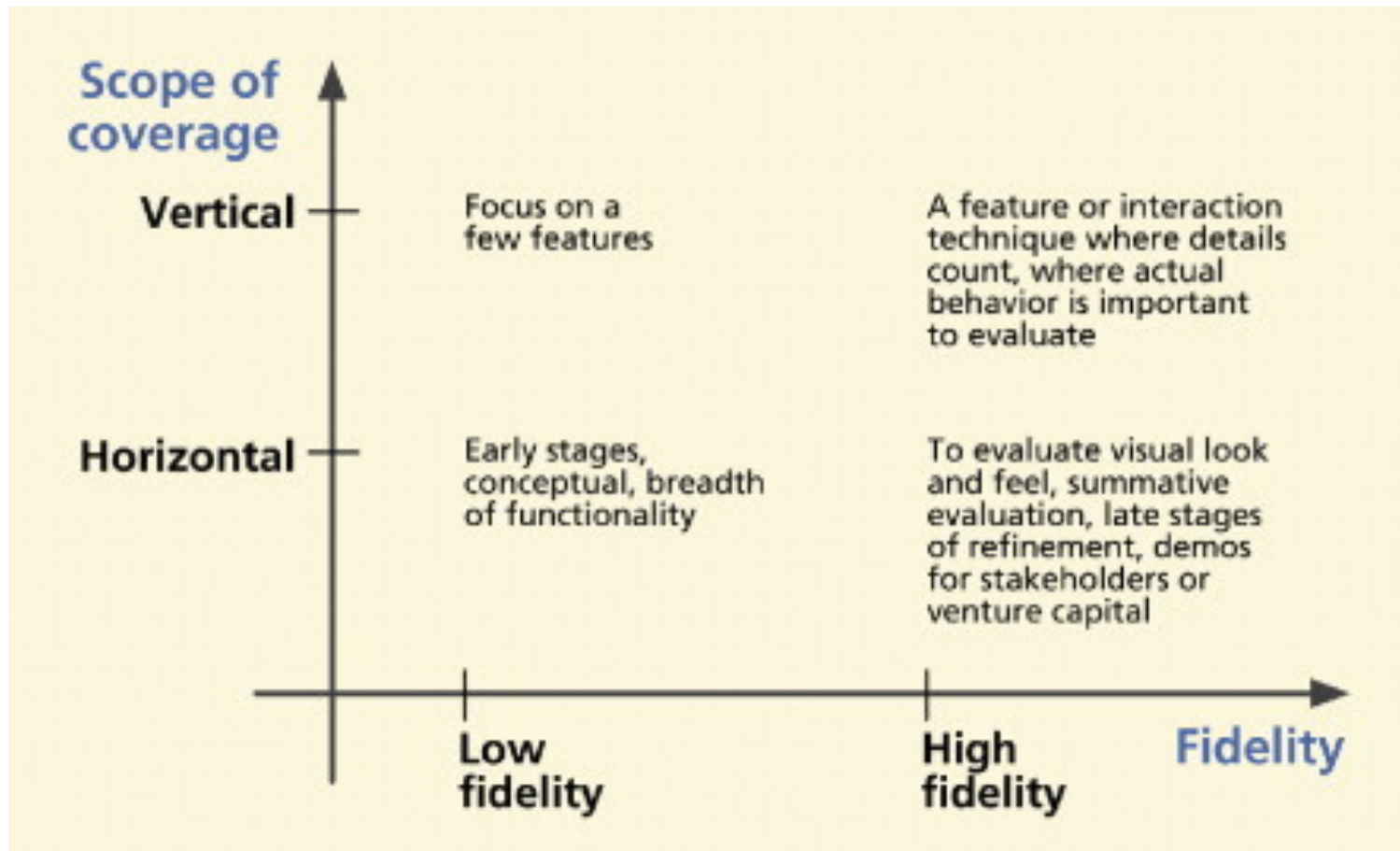
The Bill Lane Center for the American West
Jerry Yang & Akiko Yamazaki Environment & Energy Building
473 Via Ortega, Third Floor
Stanford University
Stanford, CA 94305-4121

(650) 721-1588 phone
(650) 721-3223 fax

<http://west.stanford.edu>

For more information: knightrisserprize@lists.stanford.edu

Coverage vs. fidelity

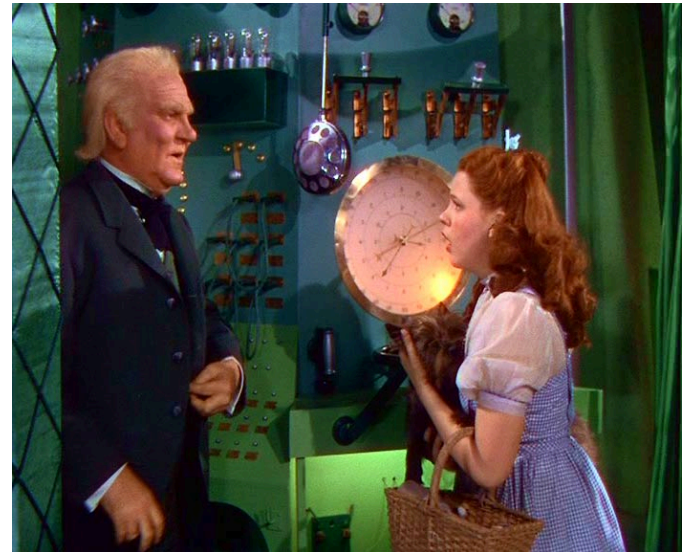


Physical prototypes

- Essential for designing systems with hardware components (mobile, kiosks, wearable...)
- Use cheap, flexible materials: cardboard, foamcore, wood, plastic
- Higher fidelity: more tangible, emotional, powerful experience
- “Executor” is distracting so consider scanning or photographing low-fidelity prototypes for mobile devices

Wizard of Oz

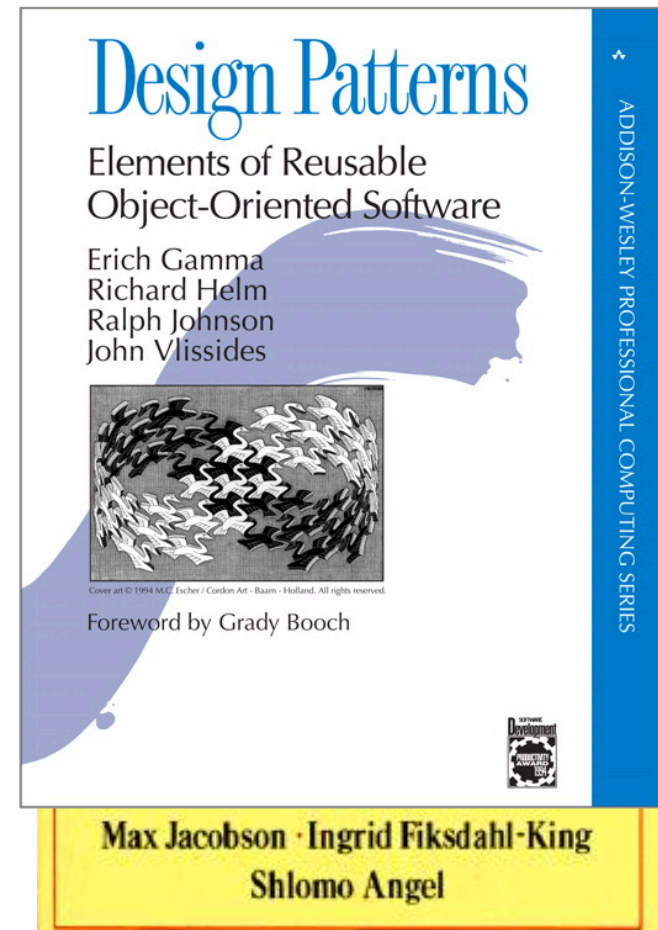
- Use (hidden) humans to imitate complex automated process
- Allows for testing and iterating on user experience before investing effort in technical innovation
- “Would people actually want this?” before “Can we do this?”
- Useful for hardware UIs, social software UIs, AI



Design patterns

- In architecture
- In software engineering
- In user interfaces

Avoid reinventing the wheel unless your killer app is a new kind of wheel.



Style guides

- Writing style guides
 - [Virginia Tech](#)
 - [Wikipedia](#)
 - [Chicago Manual of Style](#)
- Visual/interaction style guides
 - [Google Web](#)
 - [Google Android](#)
 - [Apple iOS](#)

Upcoming milestones

- Due Friday: Contextual inquiry, press release #3
- Contextual inquiry and analysis
 - Must interview at least 5 people
 - Deliverable: write-up of inquiry process, analysis, interaction requirements

Prototypes

- Due March 20
- Document your design process
- Need to see: ideation/brainstorming, sketches, low-fidelity prototypes
 - At least 5 very different approaches considered
 - At least 5 low-fidelity prototypes with multiple interactions
 - At least 1 med-fidelity prototype (for Go/No Go)
- Informal testing with at least 5 users
 - Can be crowdworkers
 - What did you learn?

Next class

- Crowdsourcing for prototyping
- Peer critique
- Continue working on contextual inquiry