a11yhack

Welcome
Wifi: GSA-guest
Password: C3ilingF@n
Demos: Room 1147
Breakouts: Room 1153
Schedule Info:
Website: bit.ly/a11yhackathon
Hackpad: http://bit.ly/a11yhackpad

a11yhack

White House Office of Science and Technology Policy, 18F, the National Institute on Disability, Independent Living, and Rehabilitation Research, and DC Legal Hackers.

Lightning talks

#a11yhack

http://18f.github.io/hackathons/a11yhack/

John Tschida

Director, National Institute on Disability, Independent Living, and Rehabilitation Research, Administration for Community Living, U.S. Department of Health and Human Services

Sue Swenson

Acting Assistant Secretary for Special Education and Rehabilitative Services, U.S. Department of Education

Video: https://drive.google.com/a/gsa.gov/file/d/0B0C6PKlzps2JelhCUHhWWHBvV0k/view

Gregg Venderheiden Ph.D

Director Trace R&D Center, Professor Industrial & Systems Engineering and Biomedical Engineering, University of Wisconsin-Madison, Co-Director, Raising the Floor International and the Global Public Inclusive Infrastructure Project

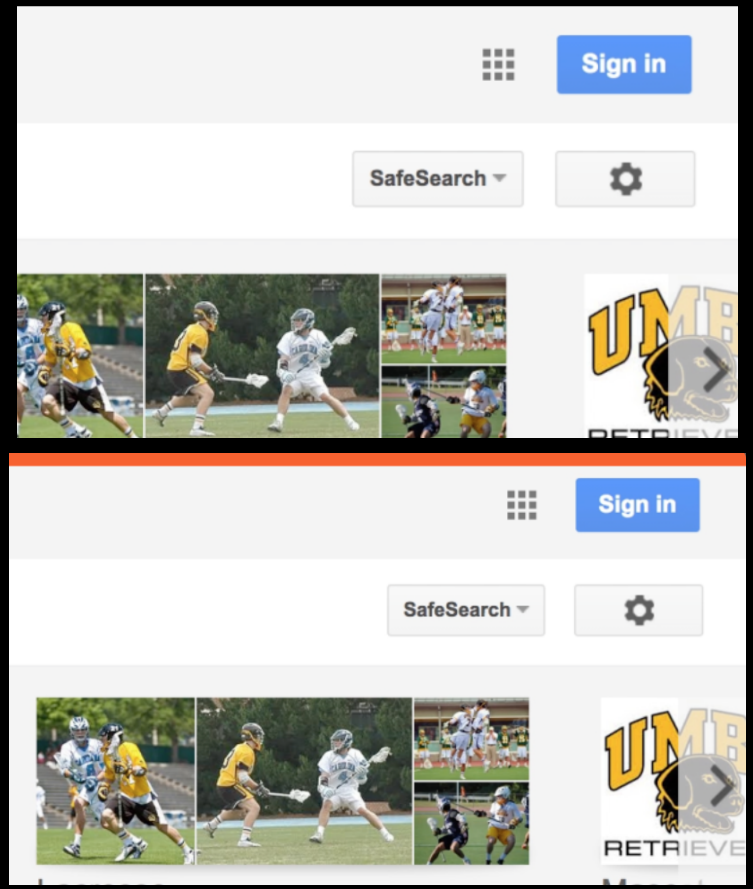
Accessible Technology Research at UMBC

Aqueasha Martin, Post-Doc
Erin Buehler, PhD Student

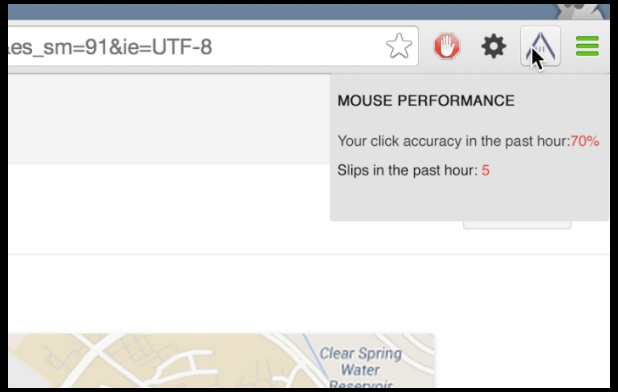
Adaptive User Interfaces for Accessible Pointing

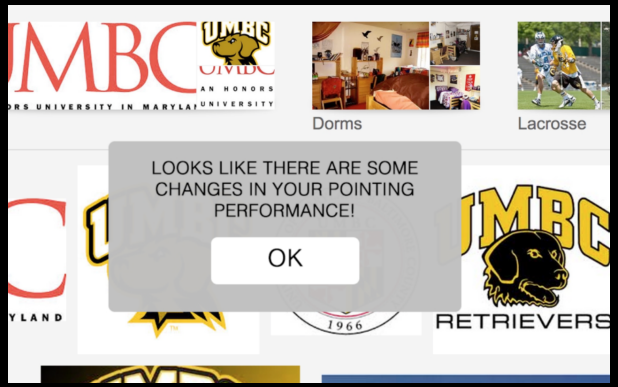
Motivation: Increase and improve web access for individuals with varying pointing abilities

Goal of Project: Design software interfaces that can detect and accommodate individuals' current pointing behaviors



Adaptive User Interfaces for Accessible Pointing

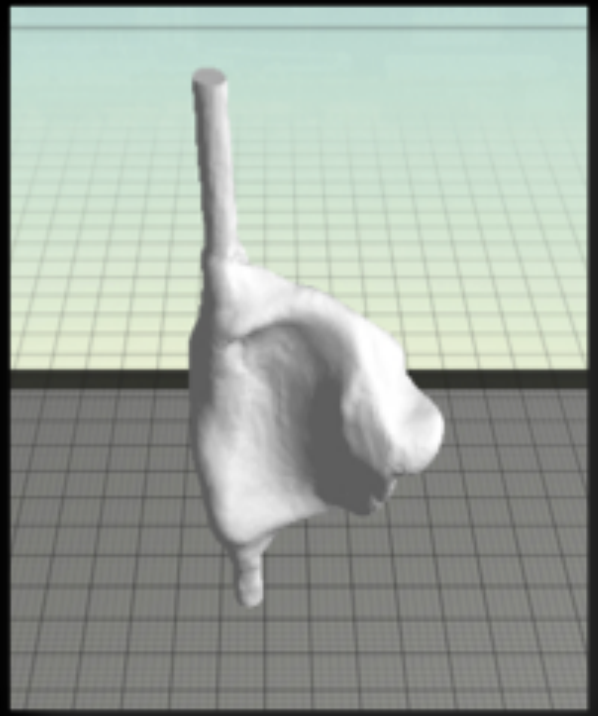




- How do we design the notifications and adaptations?
  - What type of information would people like to see?
  - How would people like to be notified of changes in pointing ability?
  - What types of adaptations do people find helpful for completing pointing tasks?

GripFab: Creating Accessible Hand Grips with 3D Printing

Motivation: Working in coordination with a special education school. Approached by occupational therapists to create a solution for a student with a hand contracture.



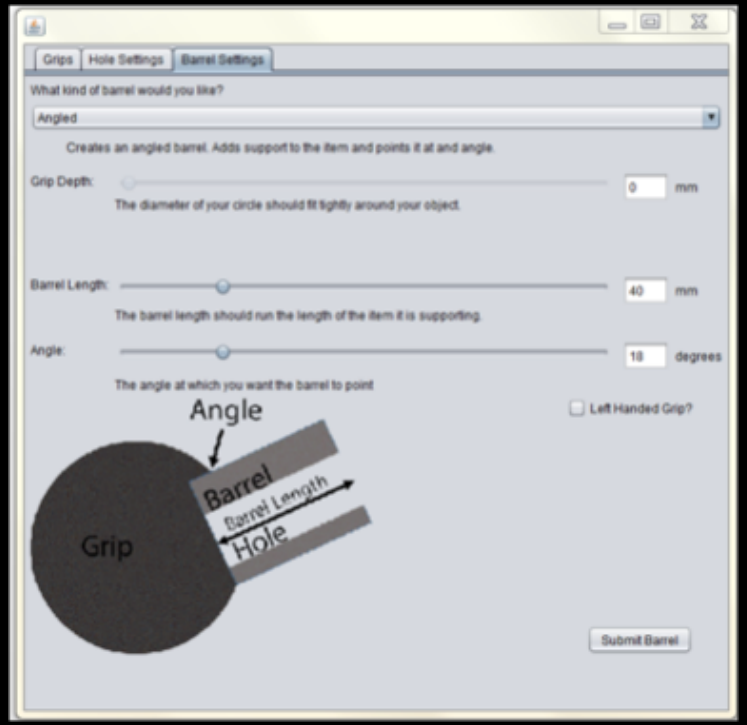
GripFab: Creating Accessible Hand Grips with 3D Printing

Outcome:

Concerns:

- Took several iterations to complete
- Technology barriers for OTs and student
- Student bought a new stylus with different dimensions about a month later

GripFab: Creating Accessible Hand Grips with 3D Printing



Accessible Technology Research at UMBC

This work has been funded by:

Thanks!

Anne Taylor

Director of Access Technology, NFB - National Federation of the Blind

Hacking Mobile Accessibility

Jamal Mazrui
Director, Accessibility and Innovation Initiative
Federal Communications Commission
Phone: (202) 418-0069
Email: jamal.mazrui@fcc.gov

Prioritizing Mobile Accessibility

- Digitial Gov: "…accessible, intuitive, mobile-ready tools that can be rendered in multiple formats on a wide range of platforms."
- Millions of mobile apps have been developed
- Convergence of mobile devices with cloud computing and broadband connectivity make mobile apps especially powerful
  - Powerful computing offloaded to cloud
  - User interface delivered on mobile device
- Offers tremendous power for people with disabilities: powerful, supportive problem-solving device can go anywhere – home, work, or play

Proliferation of Mobile Apps

- Apps continually being developed to improve productivity
- Wide range of areas/professions represented
- Many apps are completely free or inexpensive
- Apps are easy to find and install

Mobile Accessibility

- Disability access laws create strong incentives
- Section 508 of the Rehabilitation Act mandates accessibility of information and communication technologies that are produced or purchased by the federal government, including mobile technologies
  - http://www.section508.gov/
- The 21st Century Communications and Video Accessibility Act (CVAA) requires Internet browsers on mobile phones to be accessible
  - http://www.fcc.gov/document/section-718-accessibility-requirements-internet-browsers-mobile

Forms of Hacking

- Hacking may include, not just coding, but testing and documenting
- Coding contributes bug fixes or feature enhancements to open source projects
- Testing evaluates how well apps comply with guidelines for accessibility and usability
- Documenting may include writing a plain language tutorial on how to use an app with assistive technology, curating technical assistance documents for other developers (e.g., the best explanation of guidelines for a particular platform), or researching a topic of broad interest (e.g., the most common problems reported by a specific disability group on a particular platform)

Accessible and Assistive Apps

- Apps may be subdivided into accessible apps and assistive apps
- Accessible apps are mainstream apps that comply with accessibility guidelines, thereby maximizing the user base
- Assistive apps help users overcome limitations of a particular disability, e.g., OCR for a blind user, auto captioning for a deaf user, reminders for a user with a cognitive disability, or voice recognition for a user with a dexterity disability

Sources of App Projects

- Federal mobile apps directory from usa.gov
  - http://www.usa.gov/mobileapps.shtml
- Federal mobile code catalog
  - http://gsa.github.io/Mobile-Code-Catalog/
- To submit a mobile app for testing or to volunteer as a tester, visit the Federal CrowdSource Mobile Testing Program
  - http://www.digitalgov.gov/services/mobile-application-testing-program/

More Sources for App Projects

- Free assistive apps at the FCC's Accessibility Clearinghouse
  - http://ach.fcc.gov/apps-and-assistive-technologies/
- Apps for special needs from Bridging Apps
  - http://bridgingapps.org/
- Accessible and assistive apps at AppleVis
  - http://www.applevis.com/
- Accessibility tagged projects from GitHub
  - https://github.com/search?utf8=%E2%9C%93&q=accessibility

Testing Resources

- Testing resources from MobileGov community of practice
  - http://www.digitalgov.gov/2013/07/31/mobile-product-accessibility-testing-resources/
- Best practices for mobile websites from the W3C
  - http://www.w3.org/TR/mobile-bp/)
- Accessibility guidelines for app developers targeting various platforms from CTIA, the Wireless Association
  - http://www.accesswireless.org/Industry-Resources.aspx
- Mobile accessibility guidelines from the BBC
  - http://www.bbc.co.uk/guidelines/futuremedia/accessibility/mobile_access.shtml

Web Service APIs related to Accessibility

- FCC's Accessibility Clearinghouse
  - http://ach.fcc.gov/for-developers/
- Bookshare Developer Network
  - http://developer.bookshare.org/

Jinjuan Heidi Feng

Associate Professor, Computer and Information Sciences, Towson University

http://104.131.59.41:8080/soundappclient/

Steve Jacobs

President, IDEAL Group, Inc. and CEO, Apps4Android, Inc.
http://ideal-group.org/ld/

Vint Cerf

Vice President and Chief Internet Evangelist, Google

Video: https://drive.google.com/a/gsa.gov/file/d/0B0C6PKlzps2JbkNXVU5rRXlPLU0/view

Making the Web accessible

Nick Bristow, 18F

Most of the work is done for you

- HTML is (for the most part) accessible
- CSS can make it inaccessible
- Javascript can cause issues, but doesn’t have to
- Don’t use Flash

1st Rule of Accessibility

- Use proper HTML
  - Validate your HTML
  - Nest headers logically
  - Use native DOM elements
    - Use Radio Buttons, Buttons, Checkboxes, Links

Color Contrast

Can you spot the text that passes 508?

1. Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium
2. Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium
3. Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium
4. Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium

Color Contrast

- Text should have a contrast ratio of 4.5:1
- WCAG AA
  - Large text (18pt 14pt bold) 3:1

Images

- Every Image on the page requires an alt tag
  - This includes decorative images
  - Important text should be verbatim
- CSS Images
  - Should never be used for non decorative images

Aria

- Accessible Rich Internet Application
- Provides the ability to convey additional information to accessibility tools
- Should be used where appropriate

Misc

- Set language on the page
- Use <h> tags for headers
  - Nested properly h1 -> h2 -> h3
- Have a descriptive page title
- Have descriptive links

Is my site accessible?

- Testing
  - Keyboard Only?
  - Screen reader accessible?
  - Color dependent?
  - User testing

Questions?

Please feel free to ask me or any of the other 508 testers any questions you have about accessibility

Phaedra Chrousos

Chief Customer Officer & Associate Administrator, Office of Citizen Services and Innovative Technology, General Services Administration

Example Problem Statements

White House Office of Science and Technology Policy, 18F, the National Institute on Disability, Independent Living, and Rehabilitation Research, and DC Legal Hackers.

http://18f.github.io/hackathons/a11yhack/
https://hackpad.com/Accessibility-Hackathon-a11yhack-FSW5lFX53LP

Example Problem Statements

Better, Faster, Smarter Accessible Web Design

- Automating accessibility testing – note what can and what can't be automated
- Hack on open source tools so that they are more accessible
- Plug-in that tags un-tagged images
- New ways to use sound to describe graphs
- Writing accessibility libraries

Example Problem Statements

Building Accessibility into Government Workflows

- Strategies and guidance on how to include accessibility as early as possible in the software development process
- Automatically creating GitHub issues that relevant to accessibility
- GitHub Issue tagging "accessibility," "help wanted"

Example Problem Statements

Open Data and Accessibility

- What data should be prioritized for format improvements?
  - e.g. Mental Health Facilities Data
- What interesting accessibility tools can be built using open government data?
- Using open data, determine which parks are accessible nearby, including accessible transit routes to get there

Example Problem Statements

Accessible Social Apps

- Twitter Image Service that generates alt text generated from text
- What open-source tools can be developed to make advanced communication services (messaging, social media, etc.) more accessible to, and usable by, persons with disabilities?

Example Problem Statements

Accessibility Policy Hack

- What accessibility standards should the government consider as a matter of website policy?

Brainstorming!

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Brainstorming

Now it’s your turn, come up with a Problem Statements to pitch.

- 5 min intros
- 40 min brainstorming
- Add your ideas to the Hackpad and pitch them to the group at 11:45

Lunch

White House Office of Science and Technology Policy, 18F, the National Institute on Disability, Independent Living, and Rehabilitation Research, and DC Legal Hackers.

http://18f.github.io/hackathons/lunch/

Hacking

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Sharing

White House Office of Science and Technology Policy, 18F, the National Institute on Disability, Independent Living, and Rehabilitation Research, and DC Legal Hackers.

http://18f.github.io/hackathons/

Megan Smith

Assistant to the President and U.S. Chief Technology Officer, White House Office of Science and Technology Policy