Search Engine Research and Color, Design, and Usability

CS 115 Computing for the Socio-Techno Web
Instructor: Brian Brubach
Announcements

• Remote project milestone 2 meetings tomorrow
• Reading for guest speaker on Tuesday
• Assignment 4 updates
• Moving Assignment 2 pages to public folder
Search Engine Research and Health Care Discussion
Color
Color theory in web pages

• How many colors do you have to choose from with RGB?
Color theory in web pages

- How many colors do you have to choose from with RGB?
  - $256 \times 256 \times 256 = 16,777,216$
  - $2^8 \times 2^8 \times 2^8 = 2^{24} = 2^4 \times 2^{20} \approx 16 \times 1,000,000$ (CS way to estimate it)

- How many should you use?
  - Too many is disruptive/confusing/ugly
  - Too few is boring, less ability to emphasize

- Color should support the process of conveying information
- Look at number of colors and color palette of websites you like
- Pause a movie, you’ll see fewer distinct colors than occur in real life
Emotional responses and meaning

• Many theories about meanings and responses to colors
• Good starting point and structure for new designers
  • If you find a theory that speaks to you, use it
• Examples
  • Red → strength, passion, energy, excitement
  • Orange → similar to red, but less aggressive (more “cheerful”)
  • Yellow → refreshment, energy
  • Green → nature, health, well-being
  • Blue → calm, peace, stability, trust
  • Purple → sophistication, spirituality
  • White → purity, trust
  • Black → depth, power, steadiness
Cool/warm

• Cool colors → Green, Blue, Violet
  • Appear distant
  • Great for backgrounds

• Warm Colors → Red, Orange, Yellow
  • Appear closer
  • Great for menus
Some other color notes

- **Red** → Most “active” color
  - The only color that stands up to the contrast of black and white if using only one color
- **Green** → Least “active” color
- **Yellow** → Brightest color
- **Blue** → Darkest color

- **High readability combinations**
  - Black text on white background
  - Blue text on white background
  - Black text on yellow background
More color definitions

• Primary colors → Red, Yellow, and Blue (notice not RGB)
• Secondary colors → combinations of primary colors
• Tertiary colors → between primary and secondary
  • E.g., red-orange
• Hue → pure color (e.g., red, blue) with no white or black added
• Shade → pure color with black added, extending from pure hue to black
• Tint → pure color with white added, extending from pure hue to white
• Tone → pure color with grey added, extending from pure hue to gray
  • A pure color is at full saturation
  • As saturation diminishes colors fade to gray
12-hue color wheel
Color wheel classifications

• Complimentary Colors
  • Opposite on wheel
  • Highest contrasts

• Analogous Colors
  • Close to each other on wheel
  • Lowest contrast

• Harmonic colors
  • Equally-spaced on wheel
  • Appealing to the eye
  • Harmonic dyad ➔ Two complimentary colors
  • Harmonic triad ➔ Three equally-spaced colors
Color blind accessibility

• Always check for color blind accessibility
• https://css-tricks.com/accessibility-basics-testing-your-page-for-color-blindness/
Approaches to assigning colors

• Approach 1 → Main/Support/Emphasis colors

• Main color
  • Occupies most of the web page area and defines the tone of the web page

• Support color
  • Color close to the main color and that supports it
  • Can often be an analogous color

• Emphasis color
  • Used to emphasize certain elements of the web page
  • It contrasts with the Main and Support colors
  • Suggested → complement of main color or analogous to complement of main color
Approaches to assigning colors

• Approach 2 ➔ Monochromatic
  • A main color is chosen
  • Use different tints, shades, and saturations of that color

• Approach 3 ➔ Harmonic Triad
  • Select three equidistant colors on the wheel
  • Colorful and balanced design
Color choosing resources

• [https://coolors.co/](https://coolors.co/)
• [http://paletton.com](http://paletton.com)
Usability Guidelines
Usability

• Measures ease of interaction between user and website
• Speed → How fast users can accomplish a task
  • Includes configuration of the web site and page loading time
• Learnability → How easily users learn to interact with the site
• Efficiency → How many errors the user makes while completing a task
• Memorability → How well users remember how to use the site after learning it
  • Aided by consistent interface and logical steps for a task
• User Preference → How much the user enjoys using the interface
Create Predictable Links

• Links stand out from the rest of the text
• Visited and unvisited colors easy to tell apart
  • users want to know what they have visited
• Removing underlines from links makes user confuse links with text
• Give links descriptive names (not “Click Here” or “Next”)
  • Indicate where links go (e.g., “Next: Cleaning Instructions”)
• If using images for links, distinguish them from the text and indicate that they should be clicked
Use Descriptive Titles

- Titles should describe the site associated with them and the page user is on.
- Titles are used as default bookmark names.
  - A descriptive name will help identify each bookmark.
Page width and length

• Avoid a page width that will force horizontal scrolling
  • Use relative widths (e.g., percentages) rather than fixed widths

• Avoid wide text blocks (e.g., entire width of a desktop screen)
  • Some recommend at most 75-80 characters or even less
  • Up to 100-120 characters still common

• Avoid long pages should be avoided
Layout

• Page layout should indicate exactly how to accomplish the main task associated with the page.
• No elements (e.g., ads, graphics, etc.) should draw attention from components that perform the main task
Legibility

• Consider font and color
• Avoid weird fonts
• Smaller fonts can cause trouble
• Black text on white background is preferable
• Text brightness should be significantly different from background
  • Remember monitors vary
Cross-platform and cross-browser compliance

• Check your pages on Windows, Macs, and Unix OS, using different versions of each possible browser
• Do not use browser specific features
• Do not assume standard HTML and CSS work the same across platforms
Visual consistency

• Pages clearly belong to the same site
• Use logos or banners
• Keep consistent layout and configuration of elements
  • Navigation bar is consistent in its placement and appearance
  • Consistent coloring
• If the layout is not consistent, you can use identical colors and shape elements to make pages appear consistent
Navigation
Navigation

• Users should be clear about:
  • Where they will go when selecting a link
  • Where they are in the site
  • How to get back to a recognizable starting place
Navigation approach 1: sequential organization

• Pages follow a certain order and link to one another in order
• Appropriate for...
  • Describing sequence of steps to complete a task
  • Telling a story
  • Presenting chronological information
Navigation approach 2: hierarchical organization

- Appropriate for sites with large number of pages
- A main page has categories with subcategories, etc.
- Users should know their position in the structure
Navigation approach 3: web-based organization

• Most common organizational structure
• Web-like structure
  • Does not force one of the organizations previously discussed
• Pages link to one another based on content
• A page could be accessible only from one particular page
• A page can connect to many pages
Other resources

• The Design of Everyday Things by Don Norman
  • Great general design guide (not about web design)