


# Inclusion *by* Design



Alicia Jarvis (She/Her)  
#a11yTO Conf 2021

# Topics *for* Today



Intro to inclusive design

Guiding principles

Inclusive design research

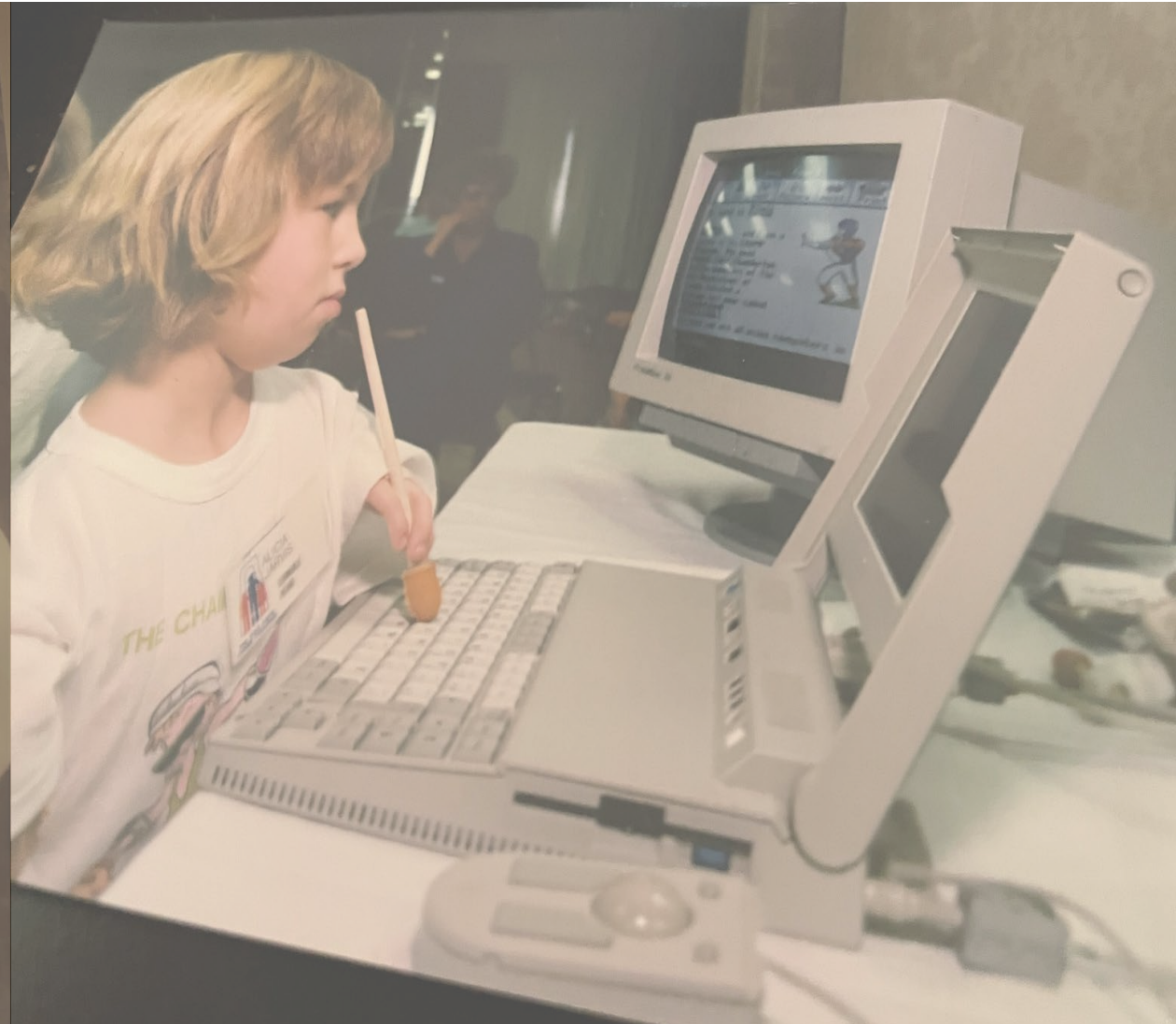
Inclusive interaction design

Inclusive content design

Inclusive visual design

# Introduction

“The Computer will be ‘the Great Equalizer’.”



# Defining design

“Everyone designs who devises courses of action aimed at changing existing situations into preferred ones.”

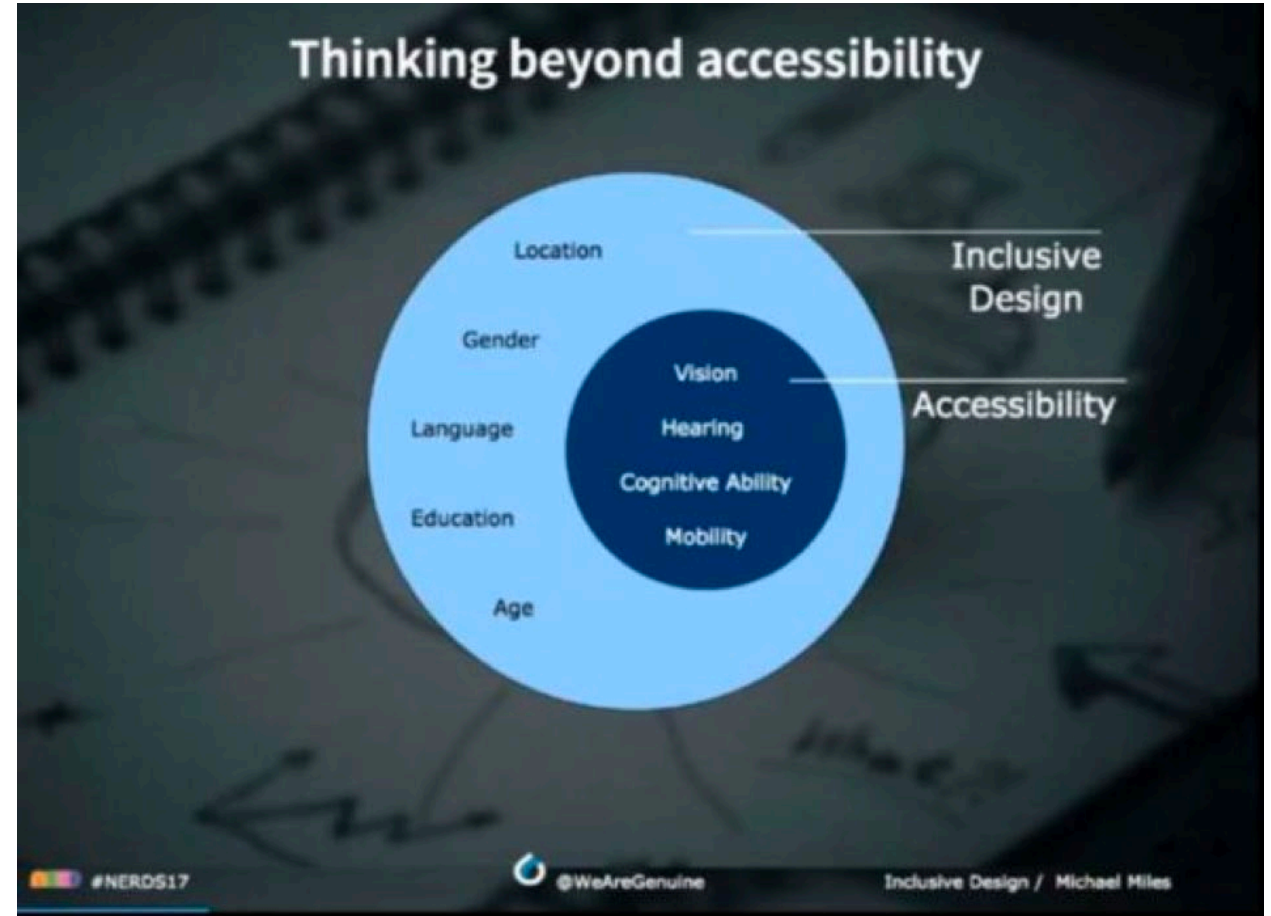
— Herbert Simon



# What is inclusive design?

Design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference.

Accessible design is a design process in which the needs of people with disabilities are specifically considered.



# Inclusive design vs. Exclusive design



WHEN USER EXPERIENCE  
DOESN'T CONSIDER **ALL USERS**  
IT SHOULD BE CALLED  
SOME USERS EXPERIENCE.  
YES, **SUX.**

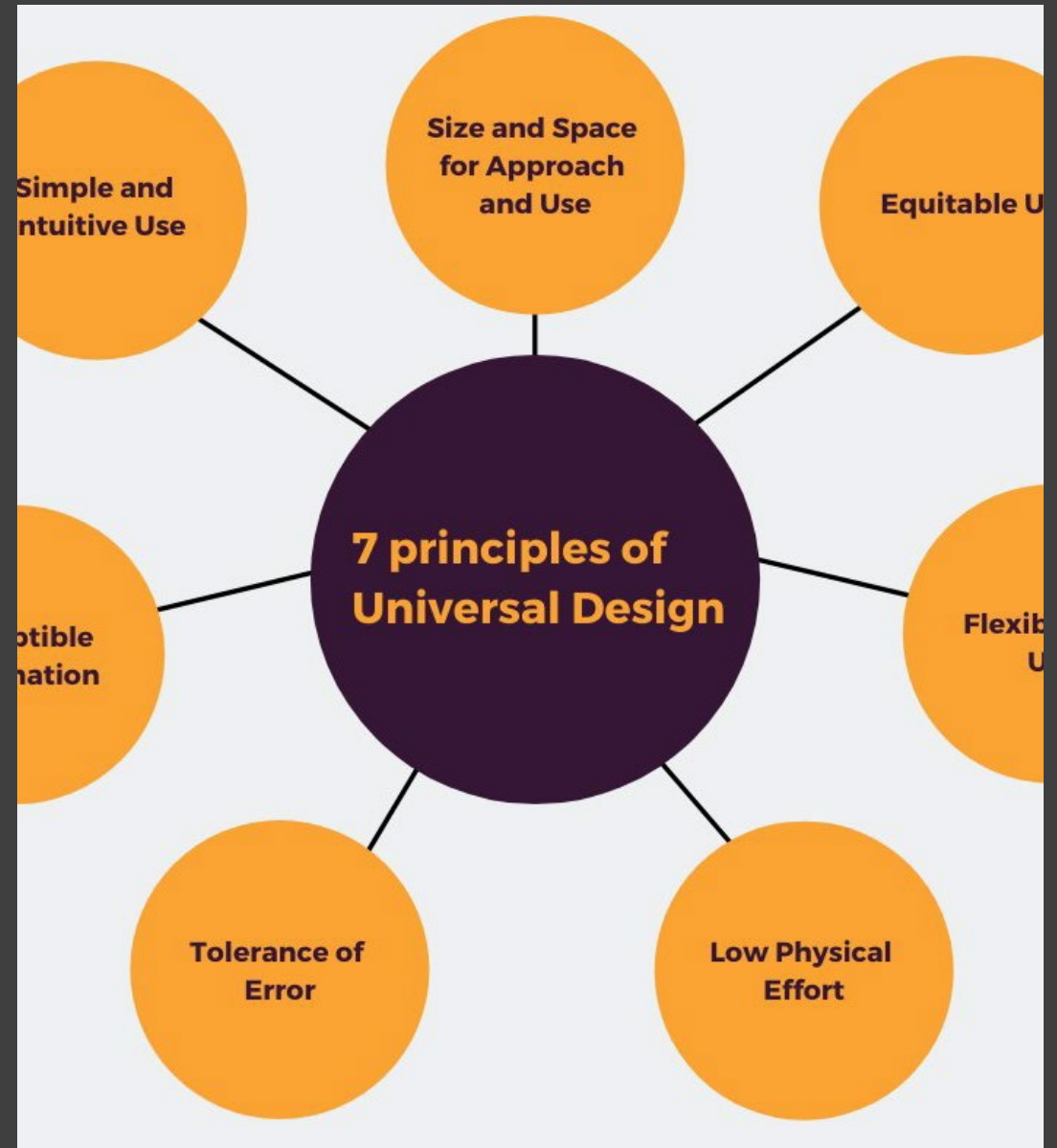




# Guiding principles

# 7 Universal design principles

- Equitable Use
- Flexibility in Use
- Simple and Intuitive
- Perceptible Information
- Tolerance for Error
- Low Physical Effort
- Size and Space for approach and use



# Inclusive design principles

- Provide comparable experience
- Consider situation
- Be consistent
- Give control
- Offer choices
- Prioritise content
- Add value



A clear glass is shown from a low angle, partially filled with water. A stream of water is being poured into it from above, creating bubbles and splashes at the bottom. The word "POUR" is written in large, black, sans-serif capital letters on the left side of the glass. The background is a plain, light-colored surface.

POUR

## PERCEIVABLE

**Information and user interface components must be presentable to users in ways they can perceive.**

Users must be able to perceive the information being presented (it can not be invisible to all of their senses)

## OPERABLE

**User interface components and navigation must be operable.**

Users must be able to operate the interface (the interface cannot require interaction that a user cannot perform)

## UNDERSTANDABLE

**Information and the operation of user interface must be understandable.**

Users must be able to understand the information as well as the operation of the user interface (the content or operation cannot be beyond their understanding)

## ROBUST

**Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.**

Users must be able to access the content as technologies advance (as technologies and user agents evolve, the content should remain accessible)

# Inclusive Design Research

# Recognize exclusion

*“Designing for inclusion starts  
with recognizing exclusion.”*  
— Kat Holmes



**Mismatch**

How Inclusion Shapes Design

**Kat Holmes**

foreword by John Maeda




DESIGN, TECHNOLOGY, BUSINESS, LIFE

Consider **who** is designing the product





# Involve everyone

- Use inclusive language in recruitment and research materials.
  - Actively seek out design input from people who don't look like you, or sound like you.
  - Interview individuals who represent a wide range of human diversity to understand their context and methods of accessing technology.
  - Ask questions that consider outliers or alternate points of view.
  - Synthesize and implement interview insights and user considerations into every project.
  - Test content, prototypes, and visuals with people who have varying abilities or use different access methods.
  - Implement changes based on research findings and user feedback.
- 



# Inclusive Interaction Design



“Disability is a mismatched **interaction** between the features of a person’s body and the features of the environment in which they live.”

— World Health Organization, 2011 World Report on Disability

# Get to know your keyboard

- Keyboard accessibility is one of the most important aspects of digital accessibility.
- People with mobility / dexterity disabilities rely on keyboards for navigation.
- Blind individuals typically use a keyboard for navigation in combination with screen readers.
- Other assistive technology mimics keyboard functionality.



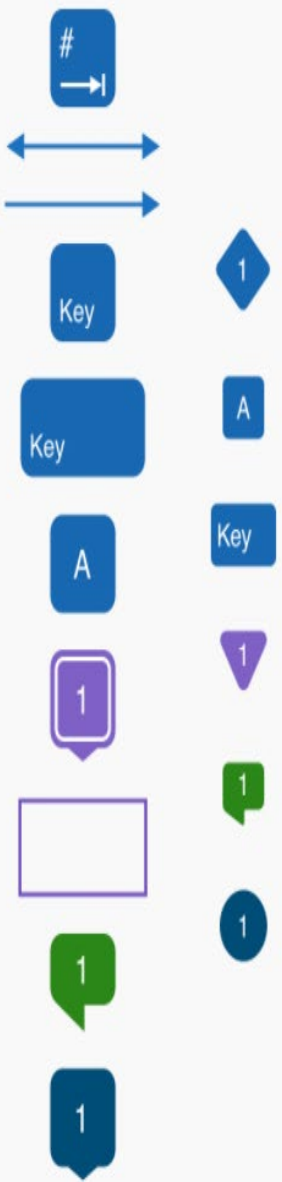
# Use Annotations

Talk with your development team.

Don't feel obligated to capture everything all at once.

Iterate and use whatever method works for you and your team

Leverage a legend



## Accessibility Bluelines

### Annotating for Accessibility

Providing accessibility bluelines (annotations), is a helpful way to ensure that critical behaviors and content are not lost during handoff from one discipline to another when working on websites, apps, or any digital property really.

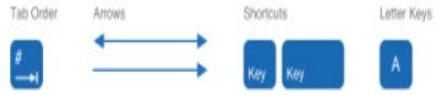
#### Wayfinding

Conveying the expected flow, function and page sectioning for keyboard and screen reader users helps ensure that UX and design intentions are clear to development, QE, and QA roles.

#### Keyboarding

- Indicate sequential tab stops for interactive elements
- Use arrows to demonstrate how a user might traverse through a group of interactive items or a custom widget
- Indicate where shortcuts and key presses are available along with expected action or behavior

Tab Order    Arrows    Shortcuts    Letter Keys



#### Content Structure

- Highlight each landmark region and indicate the role and unique name (when applicable) for each


#### Regions



#### The Content Behind the Content


An important part of a design handoff is communicating things that aren't apparent just by looking at the design. This helps ensure that content and functionality are equally available for users with different modalities.

#### Examples



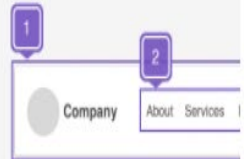
#### Focus Order

TAB key moves through the list of interact...  
When focus is on the skip link it is visible



#### Focus Order

TAB key moves through the list of interact...  
When focus is on the radio group arrow options.



#### Landmarks

Use native HTML elements when possible

# Inclusive Content Design

# Use Inclusive Language

- Avoid using descriptors that refer to a person's race, gender, sexual orientation, disability, or age, unless those descriptors are relevant to the story
- When possible, omit gender-specific pronouns.
- Replace third person (she/he) with second person pronoun (you).
- Replace adjectives for neutral alternatives, such as indefinite adjectives, substantives, or objects.
- Don't use black, white, dark, or light as metaphors



# Don't Make Me Think

- Use plain language.
- Give just the info your users need, right when they need it.
- Keep sentences short
- Aim for 5th-8th grade readability.
- Write meaningful link text.
- Create text alternatives for charts and graphs.
- Use descriptive alt text for images, icons, and controls. If the text is meant to be read, don't put it in an image.
- Ensure semantically meaningful page structure.



# Inclusive Visual Design





## What colour is the dress?

*"In visual perception, a colour is almost never seen as it really is [...] This fact makes colour the most relative medium in art."*

- Joseph Albers, Interaction of Color, 1963

## Design in greyscale

### *About Me*

Hi, I'm Alicia. I'm an Accessibility strategist, researcher, and consultant based in Toronto. I was born and raised in a small rural community just outside of Stratford, Ontario, and moved to Toronto to pursue my post-secondary education.

Following [the War Amps](#) philosophy of "amputees helping amputees," as well as, taking a human-centered and research-informed approach, my background allows me to see products as experiences and treat them as such. I have more than 10 years of professional experience contributing to all stages of the product and design life cycles — from running discovery research to leading international programs. I have a proven passion for developing innovative solutions that combine cutting-edge technology with a deep understanding of human needs.

By day, you'll find me enabling and empowering teams at Scotiabank Digital Factory. I solve problems at the intersection where business



# Check your design for contrast

*Hi, I'm Alicia.*

I'm a professional problem solver.

*Senior Digital Accessibility*

By day, you'll find me enabling and empowering teams at Scotiabank where my passion for user-centered design, user goals, human needs, & technology meet. By night, you'll find me taking on passion projects alone or with like-minded individuals..

I am an IAAP Certified Professional in Accessibility Core Competencies and I am also a Certified Scrum Master.

Colour Contrast Analyser (CCA)

Colour Contrast Analyser (CCA) Edit View Development

Foreground colour

HEX #EBDBDB

Background colour

HEX #181818

Sample preview

example text showing contrast

WCAG 2.1 results

Contrast ratio 13.3:1

- ▶ 1.4.3 Contrast (Minimum) (AA)
  - ✔ Pass (regular text)
  - ✔ Pass (large text)
- ▶ 1.4.6 Contrast (Enhanced) (AAA)
  - ✔ Pass (regular text)
  - ✔ Pass (large text)
- ▶ 1.4.11 Non-text Contrast (AA)
  - ✔ Pass (UI components and graphical objects)

# Create delight

“Customer and employee delight is the goal. All day. Every day. Understanding and delivering actions that delight define whether or not revenue is maximized. Diverse demand has changed how great brands deliver delight. Are you ready to ‘unleash different’?”

- Rich Donovan



# Thank you!

Alicia Jarvis, CPACC, CSM

Website: [Alicia.design](http://Alicia.design)

Twitter: [@A11yAlicia](https://twitter.com/A11yAlicia)

LinkedIn: [linkedin.com/in/aliciajarvis](https://www.linkedin.com/in/aliciajarvis)