



# Centering People in Information Translation

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# Accessibility and Content

## Access

- Download slides from link in chat.
- Interrupt me with your voice if you need anything /have questions.

## Content

- This talk will discuss ableism, racism, and transphobia.

# Outline

- **Background: Disability and Theory\***
- Representation and Alt Text
- Contemporary Alt Text Activism

# Blindness and Low Vision

- 285 million people worldwide have visual impairments.
- 39 million people are blind.
- Screen readers offer nonvisual access to technology by speaking visual content and enabling nonvisual interaction.

[\[World Health Organization\]](https://www.who.int/news-room/fact-sheets/detail/blindness-and-low-vision)

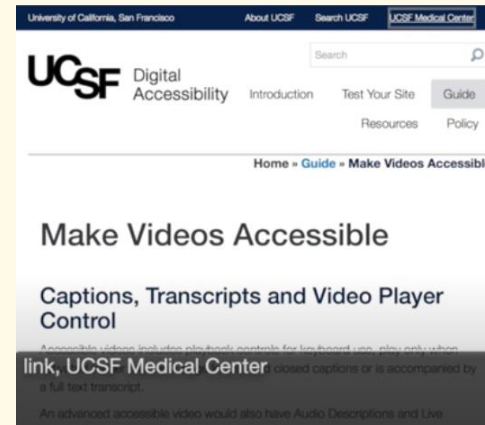


Photo Credit: UCSF



Photo Credit: San Francisco Lighthouse.



**15% of  
people  
Worldwide  
have  
disabilities**

- Mismatches between people's bodies and minds and environments that systematically limit activities and participation.
- A culture and identity.

[\[Alison Kafer 2013, World Health Organization\]](#)

# Disability Justice and Intersectionality

“INTERSECTIONALITY ‘We do not live single issue lives’ –Audre Lorde. Ableism, coupled with white supremacy, supported by capitalism, underscored by heteropatriarchy, has rendered the vast majority of the world ‘invalid.’”

[[Sins Invalid](#), Crenshaw 1989]



Mia Mingus



Patty Berne



Leah Lakshmi  
Piepzna-Samarasinha

# Outline

- Background: Disability and Theory
- **Representation and Alt Text\***
  - **Background\***
  - Study
- Contemporary Alt Text Activism

# Multimedia Information Translation and Accessibility

"[Also called] Audiovisual translation: specialized branch of translation which deals with the transfer of multimodal and multimedial texts into another language and/or culture. [\[Wikipedia\]](#)"

- Sign language interpreting
- Subtitling
- Audio description
- [Alt text](#)



Haben Girma tactile signs with student Kadus at the Victory School for the Deaf.

Image: [Haben Girma](#)



# Alt Text (Image Descriptions) Makes Visual Information Accessible to Blind People



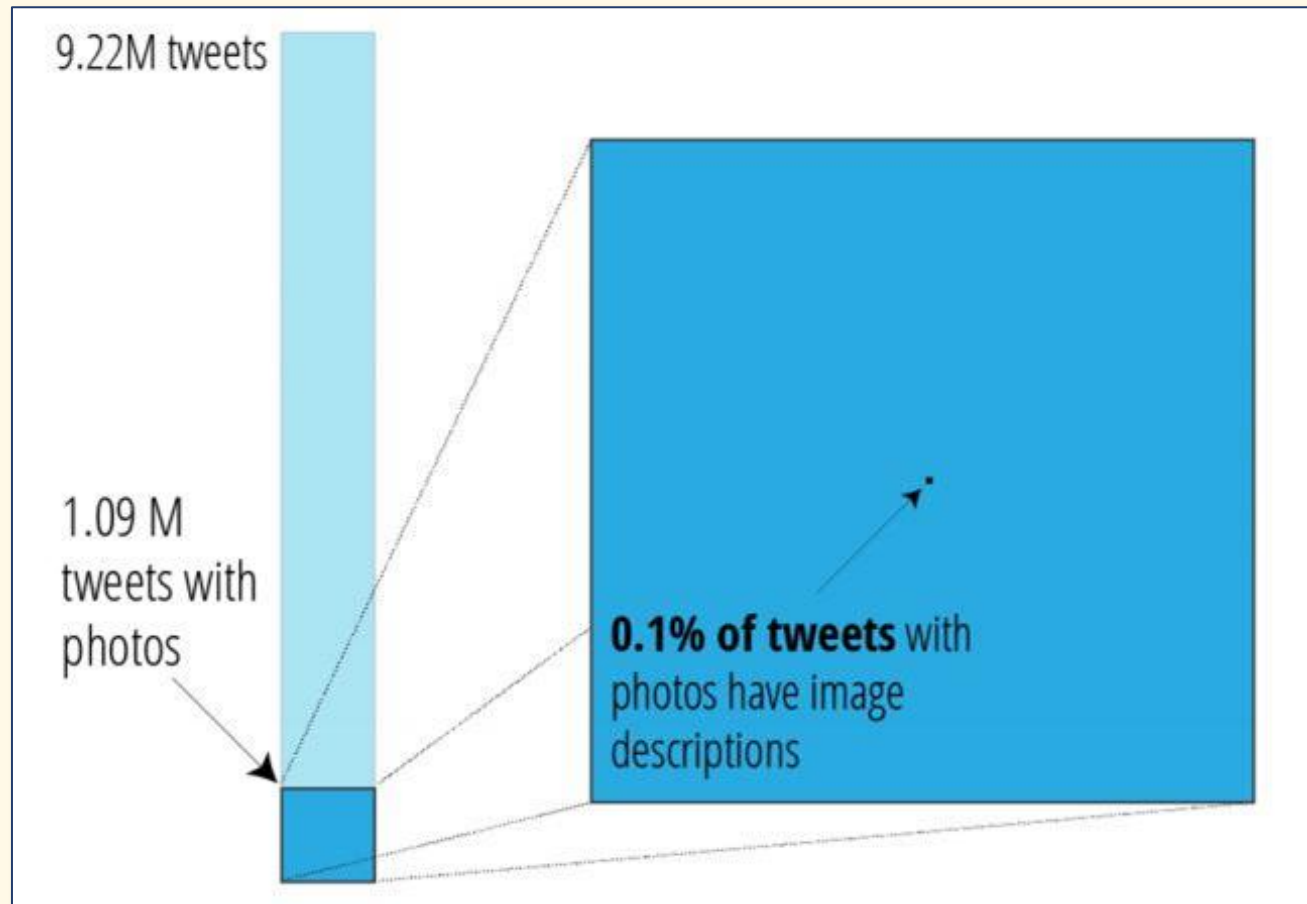
Photo Credit: PBS

**Alt Text:** A crowd of people on a street, all sitting in wheelchairs. An American flag with the stars arranged in the accessibility symbol is held up in the background.

# Many Images Posted Online are Inaccessible

In 2018, less than 1% of Twitter images were described.

[\[Gleason et al. 2019\]](#)

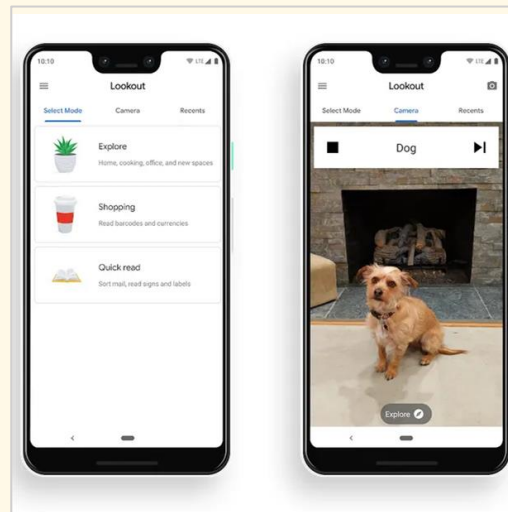


# AI May Increase Independent Information Access

## Apple's Voiceover Recognition



## Google Lookout



## Microsoft's Seeing AI

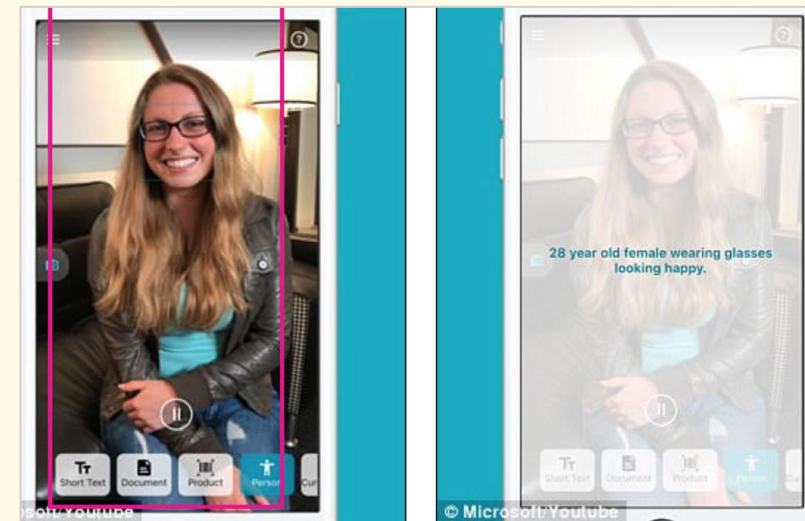


Photo Credit: Apple(Left), Google(Middle), Microsoft(Right)

# AI May Scale Alt Text generation but it Has Known Biases

- Race and gender are classified narrowly (e.g., leaving out non-binary people).  
[\[Keyes 2019, Scheuerman 2020\]](#)
- Disability is often not classified but is biased when it is.  
[\[Morris 2020, Trewin 2019, Whittaker et al. 2019\]](#)
- People already disadvantaged tend to be misclassified or harmed by AI surveillance.  
[\[Bennett and Keyes 2019, Buolamwini and Gebru 2018, Coded Bias 2020, Noble 2018, Benjamin 2019\]](#)

# Blind People Over-Trust AI-Generated Alt Text

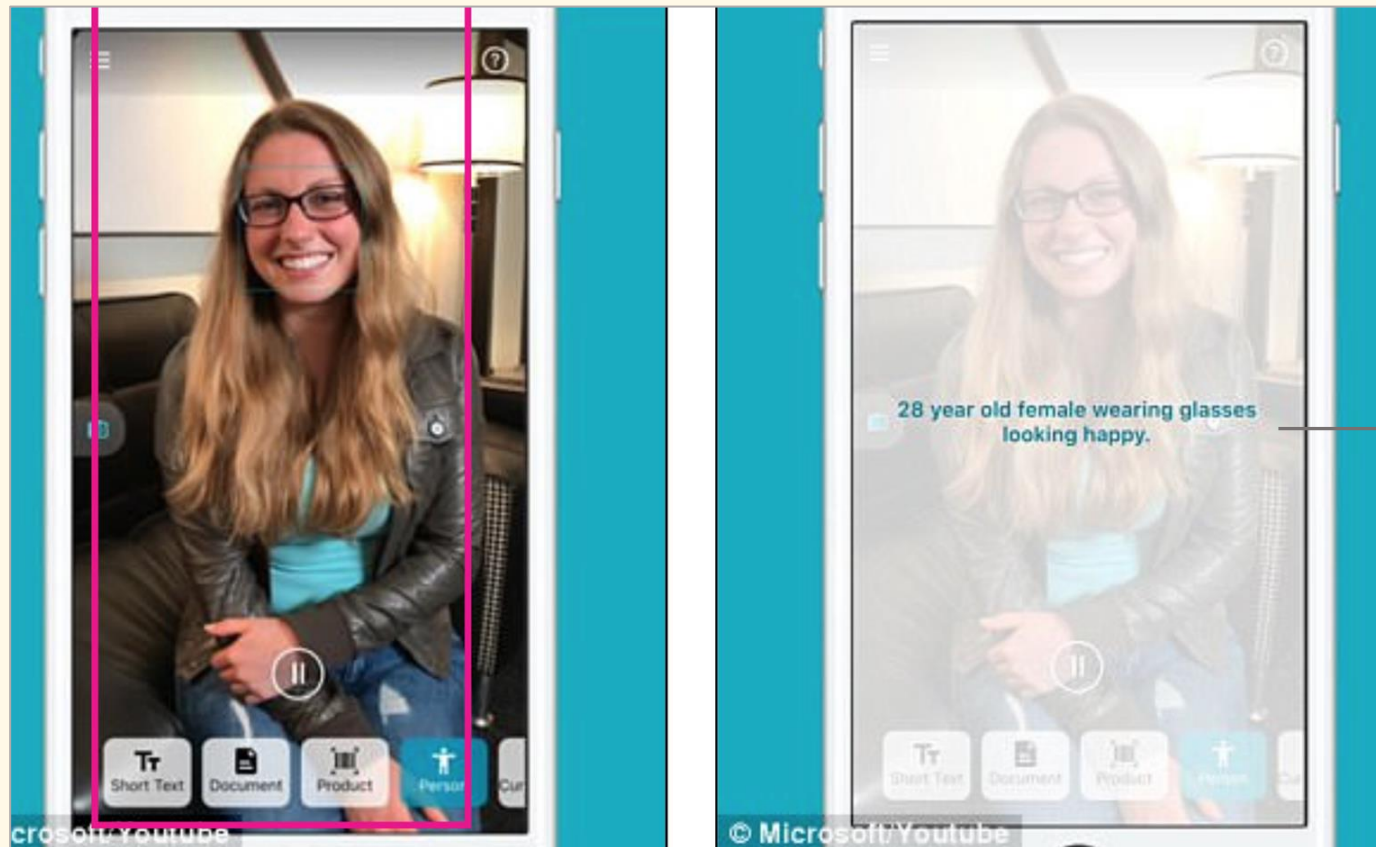
P3 claimed to trust AI-generated alt text 50%: “I probably would have just retweeted it thinking it was a photo of a skateboarder.”

[MacLeod, Bennett *et al.* 2017]



Figure 1: Image tweeted by Hillary Clinton used as a probe in [MacLeod, Bennett *et al.* 2017]. The tweet text reads, "Some on the other side may say our best days are behind us. Let's prove them wrong." The incorrect AI-generated caption says, "I am not really confident, but I think it's a man is doing a trick on a skateboard at night."

# AI-Generated Alt Text May Share Appearance Information



28 year old female wearing glasses looking happy.



# Representation is Part of Information Access, often Communicated Visually

## Disney+ Description:

“‘Hamilton’ is the story of America then, told by America now. Featuring a score that blends hip-hop, jazz, R&B, and Broadway, ‘Hamilton’ has taken the story of American founding father Alexander Hamilton and created a revolutionary moment in theater—a musical that has had a profound impact on culture, politics, and education”

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Photo Credit: Theo Wargo



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  - **Study\***
- Contemporary Alt Text Activism

# **“It’s Complicated”: Negotiating Accessibility and (Mis)Representation in Image Descriptions of Race, Gender, and Disability**

Cynthia Bennett, Cole Gleason, Morgan Klaus Scheuerman, Jeffrey P. Bigham, Anhong Guo, and Alexandra To

Carnegie Mellon University, University of Colorado Boulder, University of Michigan, Northeastern University

[CHI '21 Honorable Mention]

# Research Questions

- How does (Mis)Representation impact blind people's perspectives of alt text, when they are also marginalized based on their race and/or gender?
- What are their alt text preferences for:
  - Language to describe appearance and identity.
  - Appropriate alt text when authored by known contacts, strangers, and AI.

# Interviewed 25 Blind People also Minoritized based on Race and/or Gender

- An intersection revealed unique impact.  
[[Rankin and Thomas 2019](#), Crenshaw 1989]
- Blind people (screen reader users) may rely on alt text for information about images, potentially benefiting from AI's scalability.
- People minoritized based on their race and/or gender are among those most harmed by AI (e.g. Black and other people of color, nonbinary or transgender people).

# Interview Topics

- Brought sample photos to anchor discussion.
- Image browsing and posting behaviour.
- Experiences being misrepresented.
- Contexts where they seek representation info about others.
- Preferred language to describe themselves.
- Preferences for AI-generated alt text.

# Self-Reported Demographics

Self-Reported Race	#
Black	3
African American	1
Asian American	3
Latinx	3
mixed race Latinx	2
Middle Eastern	2
Indian	2
Native American and Hispanic	1
Ashkenazi Jewish	1
white mixed race	1
white	6
<b>Total</b>	<b>25</b>

Self-Reported Gender	#
non-binary	5
trans man	3
agender	1
trans woman	1
transfeminine	1
cis man	7
cis woman	7
<b>Total</b>	<b>25</b>

# **Content Warning for Next 3 Slides**

# Misrepresentation had Different Impacts: from Microaggression to Dysphoria

“When [blind people] find out that I’m Indian, they’re like, ‘Oh, I thought you were blonde or I thought you were a white girl. You talk like a white girl.’ what am I supposed to sound like?” [Sophie].



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“I’ve been [misgendered] before, and it’s really off putting, because I have put so much time and effort into informing people about how to make image descriptions” [Aqua].

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“I’ve been [misgendered] before, and it’s really off putting, because I have put so much time and effort into informing people about how to make image descriptions” [Aqua].

“Seeing AI typically tries to shove you into one characterization or another. Sometimes I’m a 35-year-old woman looking happy. Sometimes I’m a 50-year-old man looking happy” [Creo].

# Participants Wanted to Know Appearance and Identity in Several Contexts

- All the time.

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- All the time.
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- 'Read a room' and find community.
- Seeking specific perspectives or products.

# ‘Reading a room’ and Finding Community

“We’re about to talk about race and is the person that I’m talking to a person of color? And of course, that hits on all kinds of stereotypes, but sometimes I want to know, is this a person who may have a lived experience, or is this person more than likely an ally? Cause sometimes that shapes how vulnerable I am with people” [Yvonne].



# ‘Reading a room’ and Finding Community

“We’re about to talk about race and is the person that I’m talking to a person of color? And of course, that hits on all kinds of stereotypes, but sometimes I want to know, is this a person who may have a lived experience, or is this person more than likely an ally? Cause sometimes that shapes how vulnerable I am with people” [Yvonne].

“We all had to post a picture to introduce ourselves. And then I got an invite to this Black, Indigenous, and people of color subgroup for the training. [Group members] could instantly ask me, but I didn’t unfortunately have that same opportunity” [Kai].

# Research Questions

- How does (Mis)Representation impact blind people's perspectives of alt text, when they are also marginalized based on their race and/or gender?
- What are their alt text preferences for:
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# Preferred Representation Descriptions Varied

## Important Differences between Appearance and Identity

- **Identity:** race, gender, disability labels.
- **Appearance:** skin tone, clothing/accessories, access technologies.
  - Appearance should not be conflated with identity but can enrich description and provide some representation information when identity is unknown.

# Example Image and Alt Text



[Image: [Disabled and Here](#) (CC-BY)]

## Potential description

“**[A person]** with a filtering face mask walks down a neighborhood street with one hand in their pocket and the other hand on their cane. They have a short mohawk and are wearing a jacket, shorts, tennis shoes and glasses.”

# Human Describers Should Use Photographee's Preferred Language



[Image: [Disabled and Here](#) (CC-BY)]

## Potential descriptions

“[A person] with a filtering...”

“[A Black, disabled, nonbinary person] with a filtering...”

# Describe Appearance When Identity Is Unknown



[Image: [Disabled and Here](#) (CC-BY)]

## Potential descriptions

“[A person] with a filtering...”

“[A Black, disabled, nonbinary person] with a filtering...”

“[A person with darker skin] with a filtering...”

# When Audience is Known, Name is Sufficient



[Image: [Disabled and Here](#) (CC-BY)]

## Potential descriptions

“[A person] with a filtering...”

“[A Black, disabled, nonbinary person] with a filtering...”

“[A person with darker skin] with a filtering...”

“**[Leila]** with a filtering...”



# Increase Awareness of Representation in Media with Name and Appearance/Identity Description



[Image: [Disabled and Here](#) (CC-BY)]

## Potential descriptions

“[A person] with a filtering...”

“[A Black, disabled, nonbinary person] with a filtering...”

“[A person with darker skin] with a filtering...”

“[Leila] with a filtering...”

“[Leila, a Black, disabled, nonbinary person] with a... “



# Different Perspectives of AI-Generated Alt Text

“I favor something rather than nothing, even if some of the descriptions are wrong” [Parker].

“It’s just one more microaggression that I have to put up with from technology that’s supposed to help. I would hate if every time I upload a photo, I have to change it or do something so that it doesn’t say [age, misgender]” [Tracey].

“The people that are impacted are people that are often already bearing the brunt of so much other stuff (anti-Black messaging on social media) would just be compounded if AI is giving me biased information” [Yvonne].

# An Ethics of AI-Generated Alt Text

- Manufacturers of AI-generated alt text should build trust in impacted communities given documented misuses.
- AI-generated alt text cannot know identity.
- Best practices should regularly update to reflect currently appropriate appearance/identity language.
- AI-generated alt text should be opt in by photographees.

# Design Considerations to Promote Nonvisual Representation in Alt Text

- Adding image or visual descriptions should be easy to discover and encouraged (like pronouns).
- Educate difference between disclosing identity (optional) and describing appearance that sighted people can access.
- Allow users to opt in to automatically-generated descriptions and choose preferred language.

# Outline

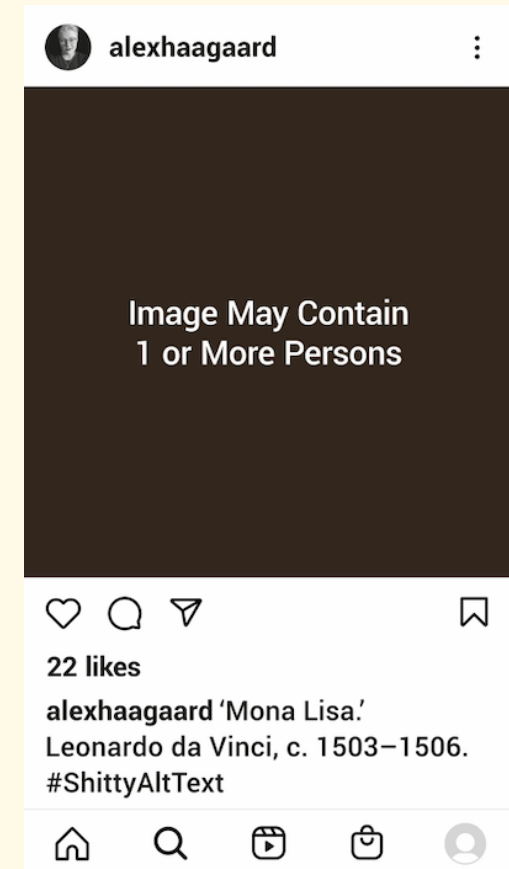
- Background: Disability and Theory
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# Shitty Alt Text

Visualizing auto-generated and 'hidden' alt text:

“An Instagram post, viewed on a smartphone. White text in a system font centred on a square the colour of heavy green fabric obscured by shadow. The text reads, “Image May Contain 1 or More Persons.” This is the alt text autogenerated by Instagram in October 2019 for Leonardo da Vinci’s painting, the ‘Mona Lisa.’”

[[Alex Haagaard](#), exhibit in #CripRitual]



# Alt Text as Poetry



- Attention to language
- Word economy
- Experimental spirit

Alt Text: A lacy, pixelated fence surrounds this section, with yellow florettes in the periphery.

[\[Bojana Coklyat and Shannon Finnegan\]](#)

# Visual Description Advocacy

- I'm not white. Honest! Blind people & visual accessibility [\[Haben Girma\]](#)
- Talk Description to Me [\[Christine Malec and JJ Hunt\]](#)
- Activism descriptions [\[@ProtestAccess\]](#)
- Audio Description Style Guide [\[Netflix\]](#)

# Bridgerton Representation Descriptions



[Image: Strong Black Lead Netflix on Twitter]

“Our most regal resident, Queen Charlotte, is a light-skinned Black woman. She has a heart-shaped face, thin eyebrows, and dark eyes that are somewhat small - or perhaps it just seems that way since she’s constantly narrowing them in such an intimidatingly queenly fashion. She wears a succession of fantastical wigs, mostly in lighter colors like white and gray, often elaborately curled. ... Perhaps the most striking is a high, fluffy Afro that radiates perhaps a foot in all directions, which the Queen wears when introducing the Prince at a ball.”

[\[Liz Gutman\]](#)



# Conclusion

- Information translation, like alt text, is not neutral but highly situated and contextual.
- Centering people's intersectional perspectives revealed:
  - Key questions for alt text authors to recognize their subjectivity, its consequences and limits.
  - Alt text design recommendations.
  - Ethics and tradeoffs among different types of authoring (human, automatic).

# Acknowledgments



[Jeffrey Bigham](#)



[Amy Pavel](#)



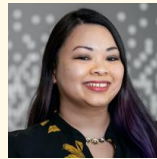
[Stephanie Valencia](#)



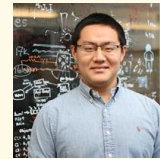
[Cole Gleason](#)



[Morgan Scheuerman](#)



[Alexandra To](#)



[Anhong Guo](#)



[Sarah Fox](#)



[Patrick Carrington](#)



[Emily Ackerman](#)



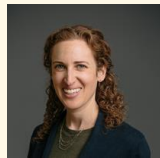
[Daniela Rosner](#)



[Alex Taylor](#)



[Anna Schmitz](#)



[Meredith Ringel Morris](#)



[Richard Ladner](#)



[Caroline Cranfill](#)



[Leah Findlater](#)



[Ed Cutrell](#)



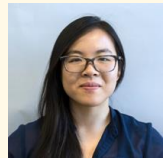
[Franchesca Spektor](#)



[Yi-Hao Peng](#)



[Cella Sum](#)



[Bonnie Fan](#)



[Alex Haagaard](#)



[Jaily Zabala](#)

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# Thank You!

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