

# Course Introduction

05-499/899 Fall 2024

Celebrating Accessibility

<https://cmu-05-499.github.io>

Andrew Begel and Patrick Carrington

# Andrew Begel

Associate Professor in S3D  
16.5 years at Microsoft Research  
PhD at UC Berkeley  
BS and MEng at MIT



Web: [andrewbegel.com](http://andrewbegel.com)  
Lab: [cmu-variability.github.io](https://cmu-variability.github.io)  
Google: "Andrew Begel"



# Patrick Carrington



Assistant Professor in HCII  
Director of AXLE Lab  
Undergrad and Ph.D. at UMBC



# Graders



Kristen Scotti



Qiaoqiao Ma

# Introductions

Get out a piece of paper and write your Andrew ID on it.

Now, write down:

1. Name
2. Major
3. Year at CMU
4. What does accessibility mean to you?

Next, we'll go around the room and have everyone introduce yourselves.

Turn this paper in before you leave today.

# Celebrating Accessibility

- Why are we here?
- Philosophy on this course

# Definitions

- Disability
  - Labels
- Models of Disability
- Functional Impairments
- Accessibility
- Assistive Technology

# Perspectives on Disability and Access

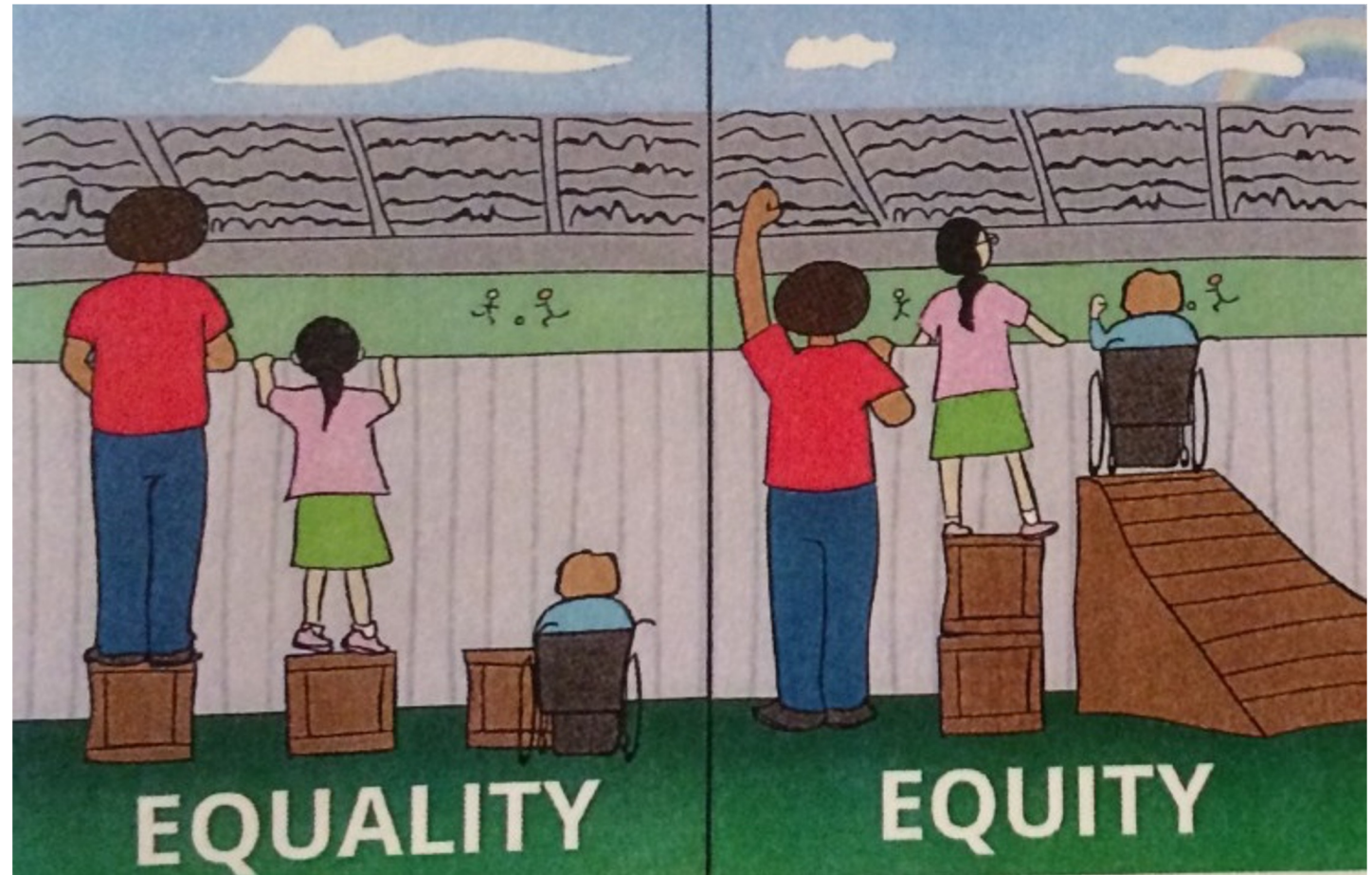
- Medical
- Social
- Legal
- Cultural
- Identity
- Advocacy



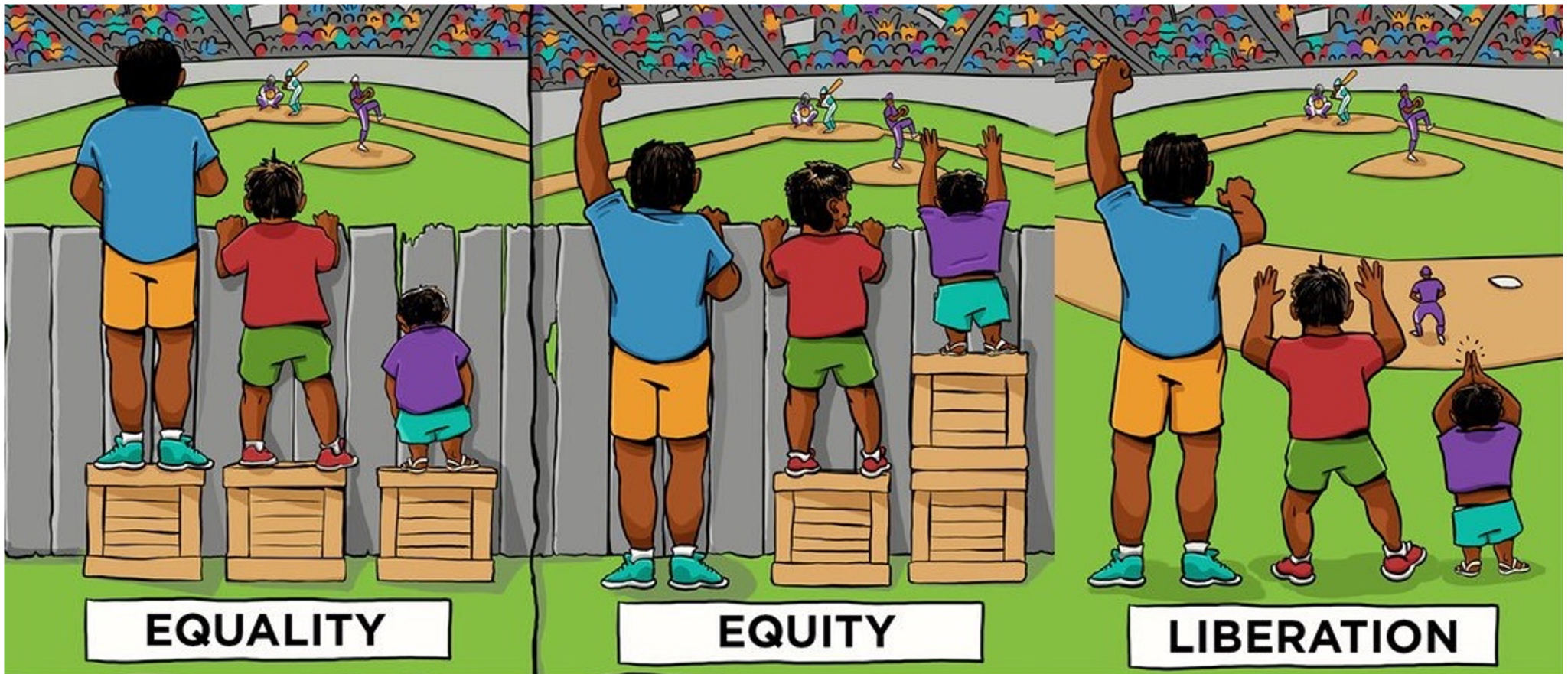
# Aim for Inclusion

When you do not intentionally, deliberately, and proactively include, you will unintentionally exclude.

– Joe Gerstandt



# Shoot for Liberation





# Screen Readers for Visual Impairments



JAWS



VoiceOver



NVDA



Talkback

# Assistive Tech for Visual Impairments



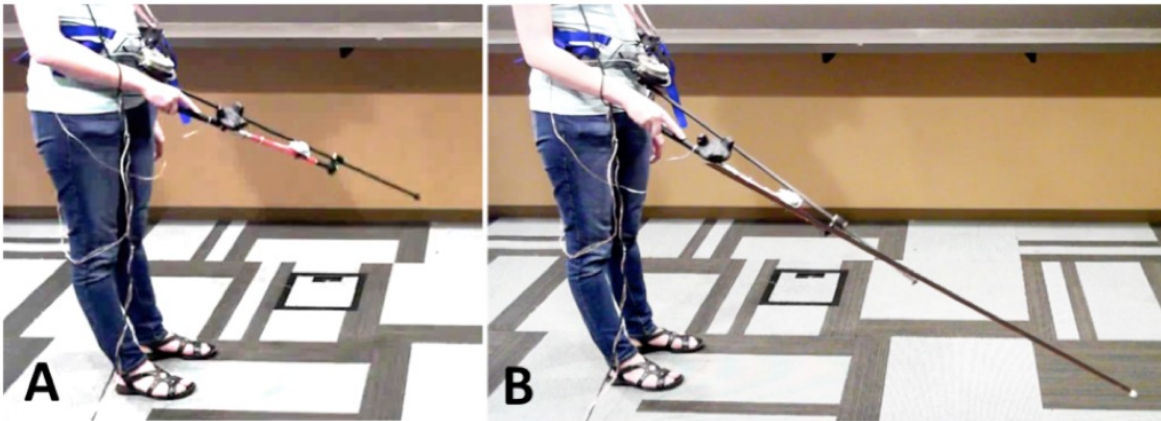
SeeingAI



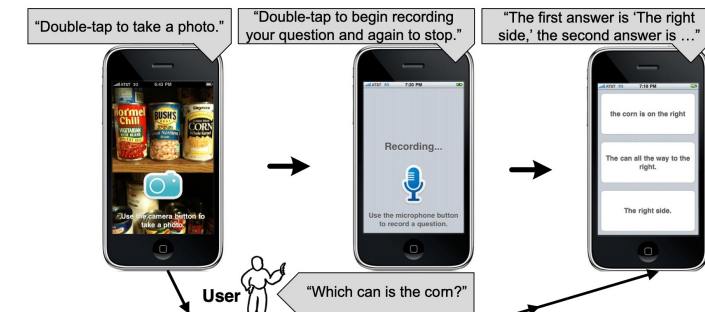
SoundScape



Code Jumper



Canetroller

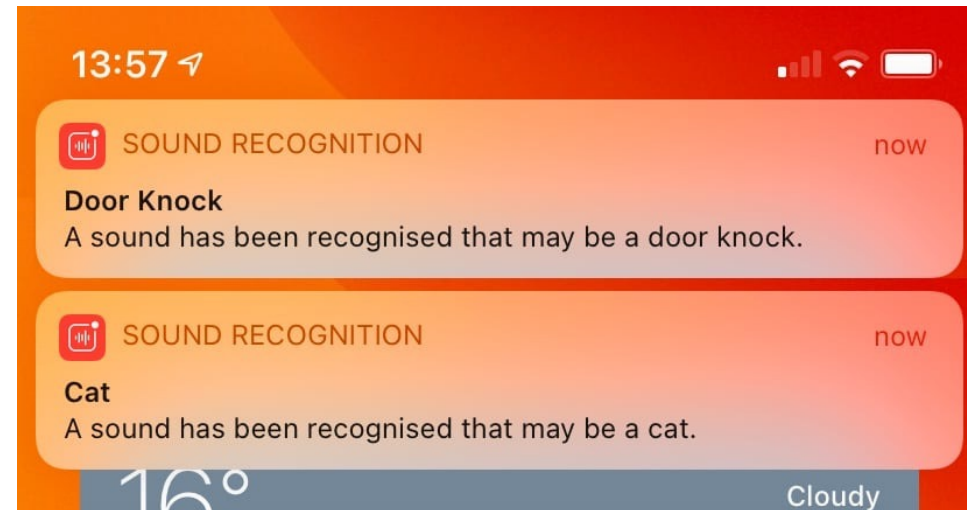


VizWiz

# Assistive Tech for Hearing Impairments



SoundWatch



Apple iOS Sound Recognition

# *Celebrating Accessibility*

- Not just fixing people's impairments
- We're not *overcoming* disability

# Syllabus

Available online at <https://cmu-05-499.github.io/syllabus/>

# In-Person Class

We expect in-person attendance at every class

General Structure of each class session:

- 15 minutes of content
- 15 minutes of reading reflection
- 15 minutes of participation exercise
- 40 minutes of content

There will be no hybrid option for this course.

However, classes will be recorded for later viewing by students.



# Waitlist

We will add as many students as we can.  
Waitlists are processed in FIFO order.

If you are on the waitlist, we recommend attending the first couple of weeks of class and attempting the first homework.

# Prerequisites - Undergraduate

For undergraduates, we strongly recommend that you have a good foundation in team-based software development. Thus, we expect you to have taken at least **one** of the following courses:

- 05-410/610 UCRE
- 05-430/630 PUI
- 05-391/891 DHCS
- 67-272 Application Design and Development
- 67-240 Mobile Web Design and Development
- 17-437/637 Web Application and Development

In addition, you should have taken or currently be taking 17-313 Foundations of Software Engineering.

# Prerequisites - Graduate Students

We do not have specific course requirements, but you must have experience or be willing to engage in either software development tasks or user studies. You need not be strong in both to take this class.

# Communication

- Slack: [cmu-05-499-f24.slack.com](https://cmu-05-499-f24.slack.com)
- We will send invites based on registration and today's participation submissions.

# Teamwork

Projects will be done in teams of 5 students.

Teams will be self-organized and stay together for the entirety of the class. Choose your teammates wisely.

Every team mixes software developers and user researchers. You will need both for a successful project.

# Teamwork

Being able to address team issues in software projects is one of the core learning objectives of this class.

Guidance on teamwork, reflection, and conflict resolution will be provided throughout the semester.

We expect significant efforts in attempting to address the team issues before asking instructors to step in.

# Readings

- Every class will have a set of readings assigned (eventually).
- Choose a reading you would like to read for the class.
- At every class, one person will present one of the readings.
- Sign up for your date at the link on Canvas.
  - You can find this in the Announcements tab.

# Presenting Readings

- Leader presents summary of the paper's big picture.
- Leader prepares 2 discussion questions for the audience
  - 1 question that the authors propose in the paper
  - 1 question that leader comes up with that logically follows on from the paper
  - Think deeply!



# Assessment

- Homework - 25%
- Projects - 60%
- Participation - 15%
  - You may miss 2 participation exercises without losing points.
- See the syllabus for more details on points assigned to each homework and project.

# Grading

- Turn in work on time
- Regrade policy
  - Regrade requests can be submitted via Gradescope.
  - The **regrade period is open for one week** after grades have been released for a particular assignment.
- All submissions must be accessible (as described in HW1)

# Late Work

- Late work will receive feedback but no credit.
- Due to heavy emphasis on planning & teamwork in this course there are no late days;
- We expect that you anticipate unexpected events in your planning, and coordinate with your teammates when they arise.
- Exceptions to this policy will be made only in extraordinary circumstances.

# Absences

All students are permitted two class absences without any impact on the final grade.

When you must miss class, please notify the instructors on Slack (at least 24 hours in advance except for illness/emergency), so that we can discuss alternative arrangements for catching up on class and associated work.

# Time Management

- 12 hours a week
  - 3 hours in class
  - 9 hours outside of class

# Writing + AI

You may use generative AI technologies such as ChatGPT or CoPilot for assisting in code development or client communications, unless the question specifically prohibits it.

Using AI comes with two caveats:

1. You must clearly indicate the use of such technology (and name the tool) in every homework question or source code file where an AI tool was used as a form of attribution, just as you would if you had taken help from a friend;
2. You are liable for factually inaccurate answers or unspecific rambling produced by AI tools; it is your responsibility to edit AI-produced content before submitting it for class purposes.

# No Devices

- The use of computers has been shown to be distracting to you *and* those around you. Unless you have an accommodation which you have already discussed with the instructors, you may not use any electronic devices in this class.
- This includes laptops, phones, tablets, watches, etc.

# Academic Honesty

- We adhere to CMU's policy on Academic Integrity.
- Projects will be done in groups. Group members may talk to one another, but groups should do their work independently.
- Be honest about your contribution to your group's work.
- Cite your sources!
- Violations of this policy will be considered cheating.



# Diversity

- Your classmates are your colleagues.
- Treat one another like professionals.
- Diversity is fundamental to building and maintaining an equitable and inclusive campus community.
- Each of us is responsible for creating a safer, more inclusive environment.

# Accommodations

If you have any accommodations you should be receiving per a letter from the Disability Resources Office, discuss these with us ASAP.

If you suspect that you may have a disability and would benefit from accommodations, contact [access@andrew.cmu.edu](mailto:access@andrew.cmu.edu).

# Self-Care

Take care of yourselves

- move regularly
- eat well
- reach out to your support system or the instructors if you need to

# Course Topics

- Disabilities
- History of Disability and Policy
- Assistive Technology
- Software Accessibility Guidelines
- Design Methods
- Disability Advocacy
- Responsible AI
- Fabrication
- Domains:
  - Games, Sports, VR/XR, Creative Arts, Software Development, Education, Employment, Transportation, Housing, Museums, Libraries, Architecture, Cooking, Dating, Exercise,

# Homework

- Workload
- Expectations
- Time Management

# Course Project

- Teamwork
- Partner organizations
- Scope
- Timing
- Presentations and Reports

# Teamwork Survey

- Help us learn more about you.
- Please fill out the Teamwork survey in Canvas.
  - Look for this in the Announcements tab