

C++ ONLINE

SEJAL GUPTA

KEYNOTE:

CODE & CULTURE

CRAFTING INNOVATION
THROUGH DIVERSITY

2025

CODE AND CULTURE

Have you ever felt lost in a foreign land where you can't make sense of sign boards or maps?



CODE AND CULTURE

Can you help me figure out if this milk carton is expired or not?



CODE & CULTURE

Crafting Innovation Through
Diversity

SEJAL GUPTA (She/Her)

- Software Developer, India
- Founder @ WIT++: Women in Tech
- Enthusiastic about Green Computing
- Tea Sommelier ☕;Blogger📝



Disclaimer

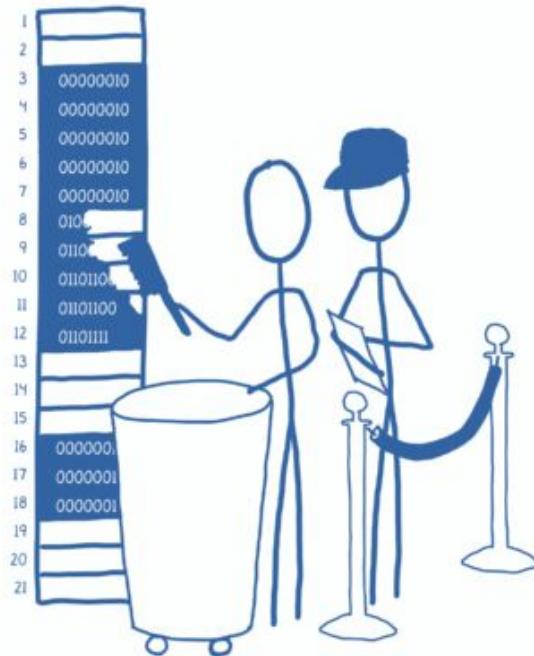
The thoughts and views expressed solely represent my opinion. The content in no way represents the views and opinions of the people, institutions, or organization that I may or may not be associated with in professional and personal capacity, unless explicitly stated.



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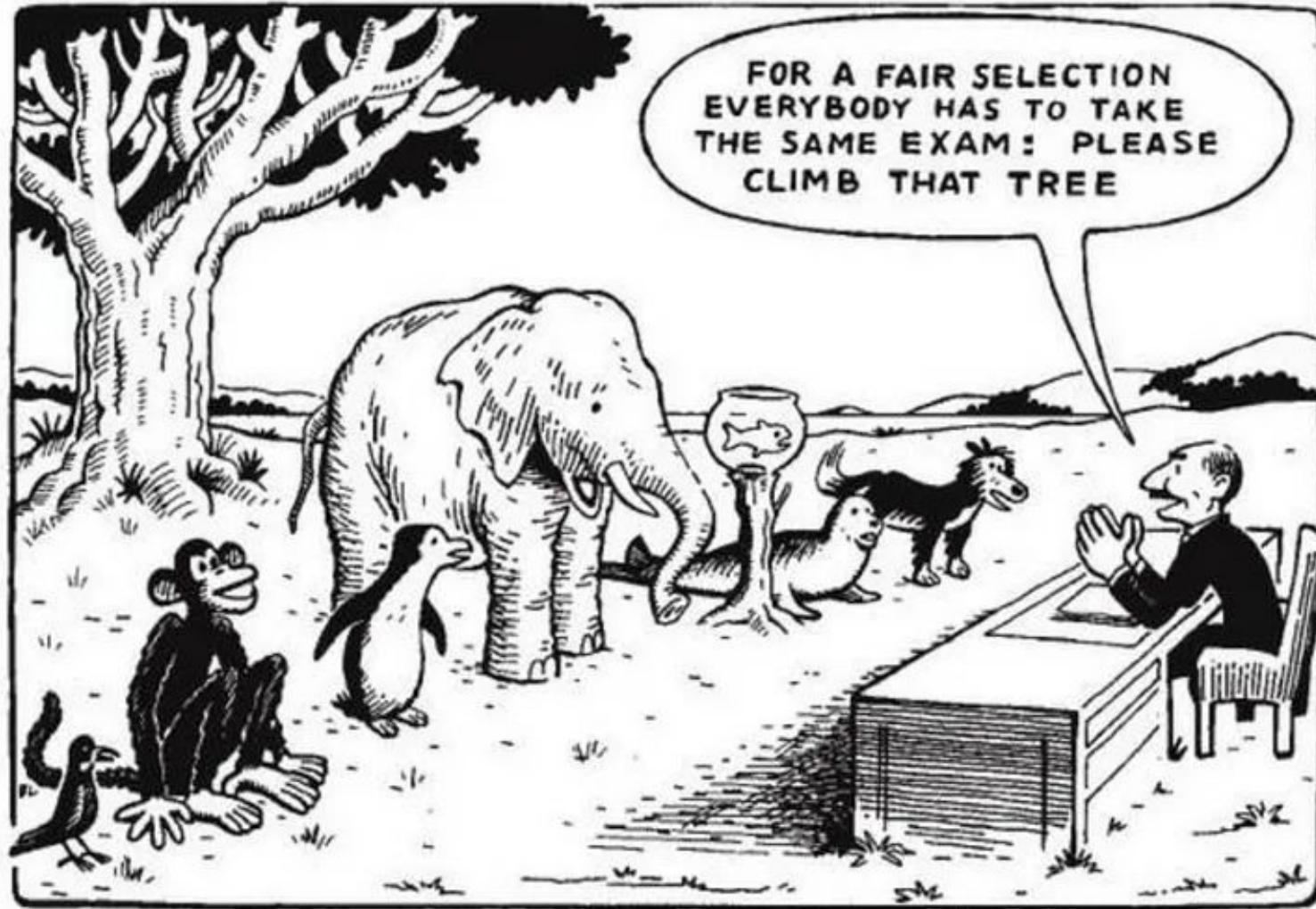
Agenda

- 1. What is Inclusion?**
- 2. Why should I care about Inclusion?**
- 3. Case Studies on Inclusion**
- 4. How can I bring inclusion through my code?**
- 5. D&I in Workplace**
- 6. Best Practices & Q/A**



What is Inclusion?

Treating everyone the same is the best way to be inclusive.



Equality



The assumption is that **everyone benefits from the same supports**. This is equal treatment.

Equity



Everyone gets the supports they need (this is the concept of "affirmative action"), thus producing equity.

Justice



All 3 can see the game without supports or accommodations because **the cause(s) of the inequity was addressed**. The systemic barrier has been removed.

Agency



Through equity, and social justice, each has the access they need to health and education to build wealth in order to **buy their own seat inside the stadium**.

What is Inclusion?

Treating everyone the same  the best way to be inclusive.

CODE AND CULTURE

Geographic Inclusion

Linguistic Inclusion

Inclusion

Neurodiversity

Access**ibility**

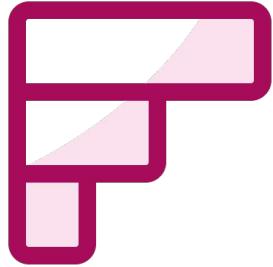
Equity

Diversity

Economic Inclusion

Cultural Inclusion

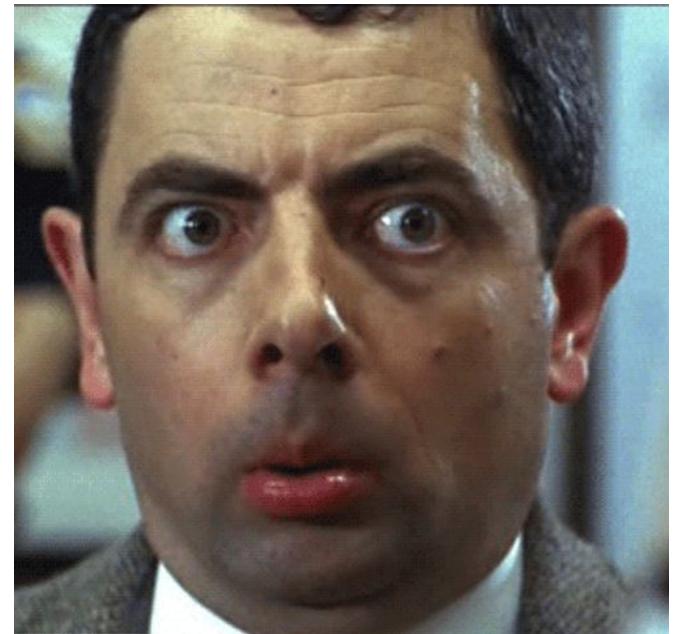




Which one(s) of these Netflix series have you watched or heard of?

The Problem

Until 2016, Netflix struggled
to gain traction globally



Key Reason?

Lack of representation in
their content creation teams,
which were dominated by a
narrow demographic



Diverse stories connect the world

Solution^[1]: Consciously hired diverse talent

Results^[1]:

1. **\$15 billion (~30%)**
Increase in Revenue
2. Gained **47.3 Million**
international subs in
2 years





Hi, I am Sejal Gupta

I am a C++ Programmer

I'm highly enthusiastic about exploring new avenues and delivering reliable projects. With an optimistic mindset and a strong commitment to personal growth, I'm eager to tackle challenges and consistently deliver high-quality results. I approach everything with a positive attitude and a focus on growth.

[Check Resume](#)

CODE AND CULTURE

- ❑ 8% of men = ~**322 million men** are colorblind^[3]
- ❑ 0.5% of women = ~**20 million women** are colorblind^[3]



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CODE AND CULTURE

- ❑ 8% of men = **~322 million men** are colorblind^[3]
- ❑ 0.5% of women = **~20 million women** are colorblind^[3]
- ❑ 28% = **~2.2 billion globally**, live with some form of vision impairment^[3]

“An estimated **1.3 billion** people, i.e. **16%** of the global population, currently experience significant form of disability” [2]

Why is Inclusion in Tech Important?

Why Should I Care About Inclusion as a Developer?

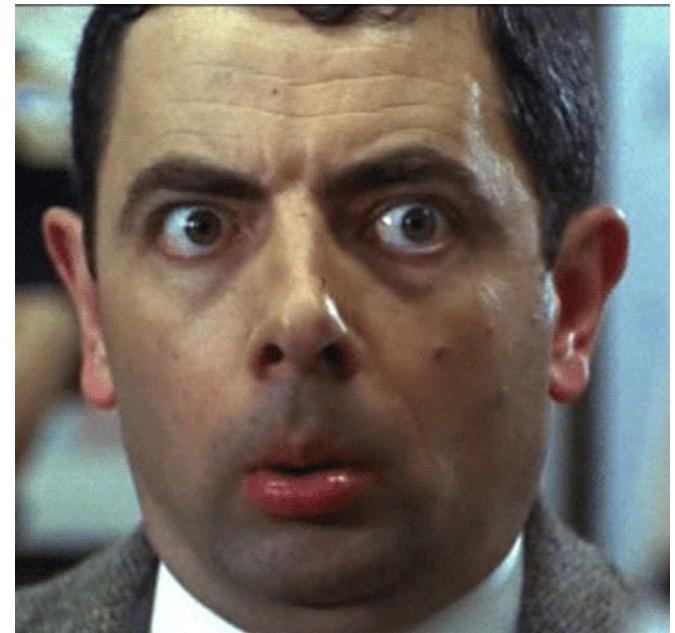


CODE AND CULTURE

- **Women hold 25%** of computing jobs, despite representing 49.6% globally^[4]
- **Less than 5%** of tech workers globally openly identify as LGBTQIA+^[5]
- **Black professionals hold 2%** of tech jobs, despite making up 6-10% of population in UK, France^[6]
- **1–3%** of global tech workers **disclose disabilities** compared to 16% of the global population living with disabilities^{[2],[7]}

The Problem

Many tech products aren't designed for people with disabilities in mind.



Case Study: Inclusive Design for Accessibility



Case Study: Inclusive Design for Accessibility



Case Study: Inclusive Design for Accessibility



Case Study: Inclusive Design for Accessibility



Key Takeaway

Diverse teams have the power to create more inclusive and user-friendly product!



Girls: "yeah, I'm a different size at
different stores"

Boys:



The Problem

**Many algorithms and
softwares do not test for
Inclusivity.**



Case Study: YouTube's Auto-Muting Algorithm

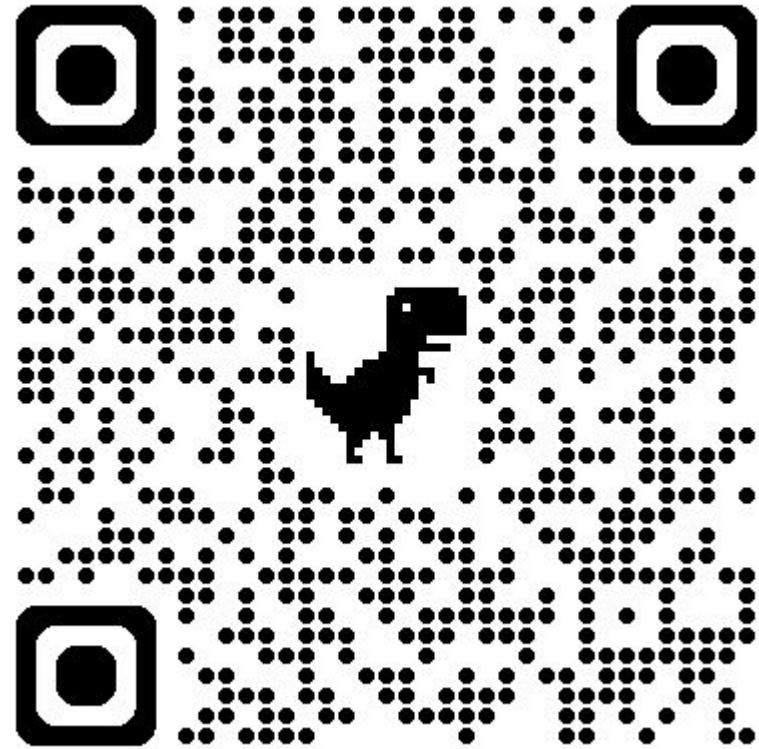
YouTube's **auto-detection**
for silent videos
mistakenly muted **sign**
language videos,
assuming they contained
“no content.”



Key Takeaway

Inclusivity in tech is not just “beneficial” but **essential** for truly global user engagement.





https://sejal-q.github.io/CPP_Online/



Did you find any problem navigating this form?

CODE AND CULTURE

Case Study

Pronouns



First Name

Last Name

Date of Birth

Phone No.

- ### -

Security Check

Type the text here



Submit ►

CODE AND CULTURE

Case Study

Pronouns	First Name	Last Name
▼	Li	Chan Mei
He/His	Phone No.	
03/02/1999	+91	
Security Check		
Type the text here		Submit ►

Mitigating Bias

**Innovation
&
Diverse
Perspective**

SEO-friendly

**A11y Overlap,
More Traffic**

**Broader
Adoption,
Higher
Engagement**

**Broader
Functionality,
Competitive Edge**

CODE AND CULTURE

- Global disability market represents **\$8 trillion^[8]**
- **19% Increase** in Revenue^[9]
- **78%** millennials and Gen z population prefer inclusive brands^[10]
- Inclusive workplaces boost performance by **56%**^[11]

How can I bring Inclusion through my Code?

```
#include <inclusion.h>
```



SIGN LANGUAGE



WHEEL CHAIR



DOG LEASHED



CLOSED
CAPTION



LARGE PRINT

ACCESSIBILITY



FINGERPRINT



ASSISTIVE LISTENING



LOW VISION



UNIVERSAL
ACCESS



PHONE VOLUME



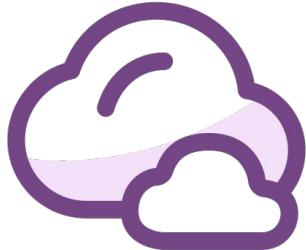
SIGN LANGUAGE
INTERPRETATION



AUDIO
DESCRIPTION



INFORMATION



How do you think we can make our tech product more accessible?

Implementing Authentication Security Protocols

Select all images below that match this one:

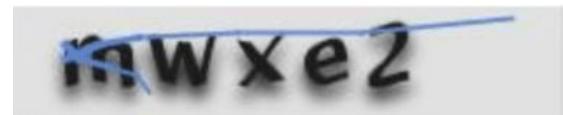
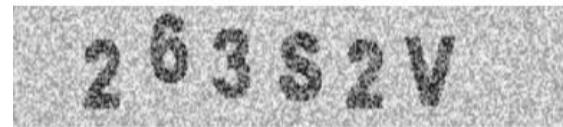


  Verify



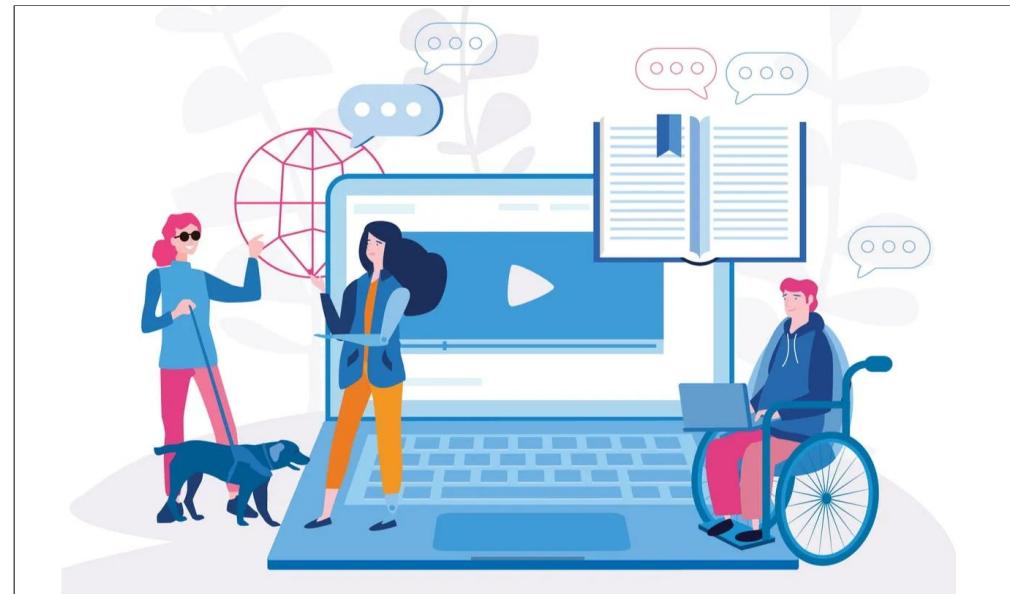
 i'm not a robot



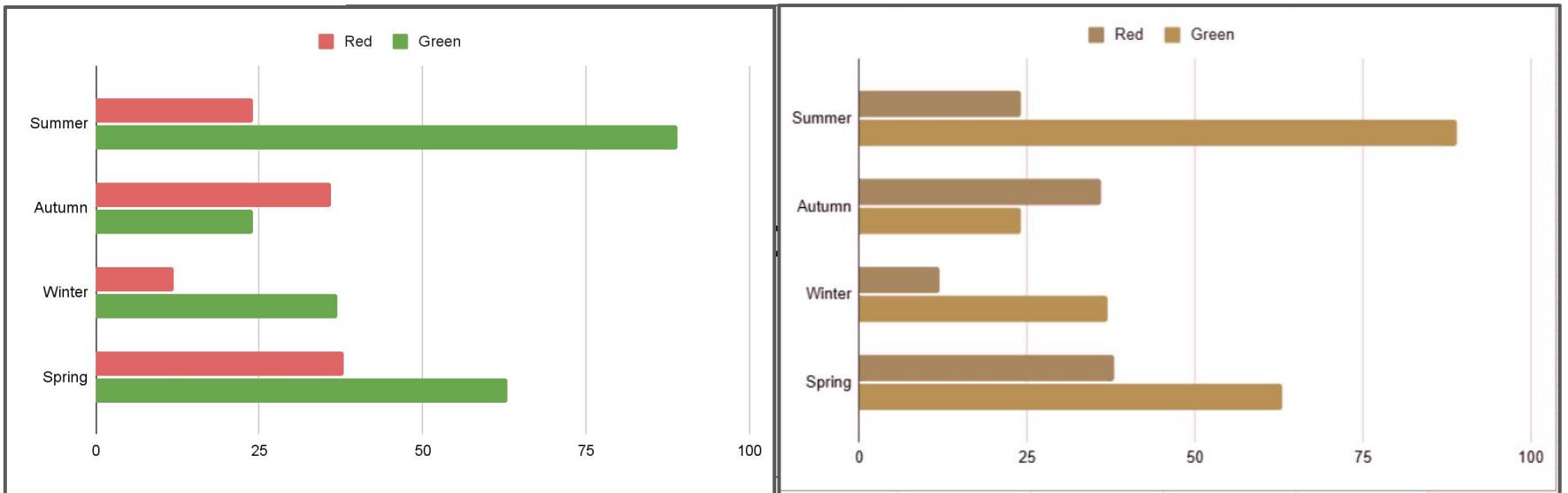
CAPTCHA
Privacy - Terms

CODE AND CULTURE

- a) Make it Keyboard Navigable
- b) Provide text alternatives for media content
- c) Incorporate assistive tech tools, like captions, text-to-speech, voice recognition, if needed.



CODE AND CULTURE



Bar chart to normal eyes

Same chart to Green-Red color blindness



Q Search or jump to...

cmd+k



Memory / CPU



logins



Memory



Google hits



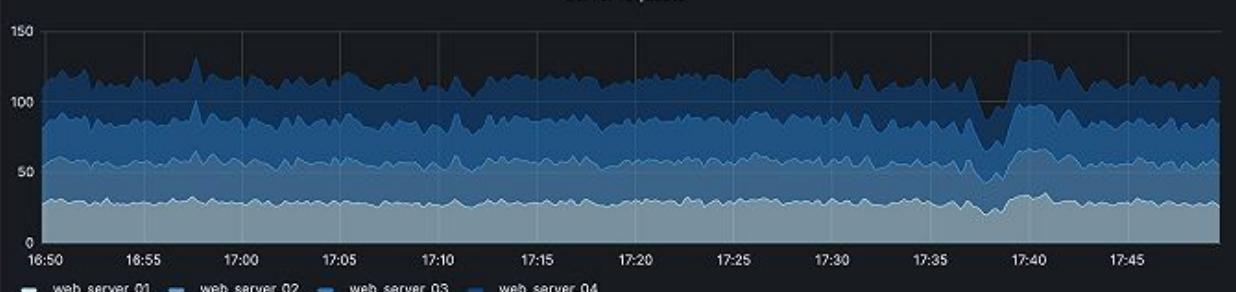
Support calls



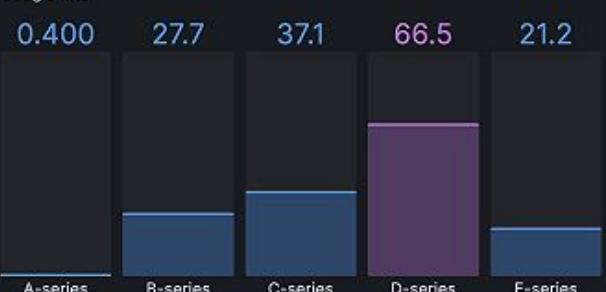
Sign ups



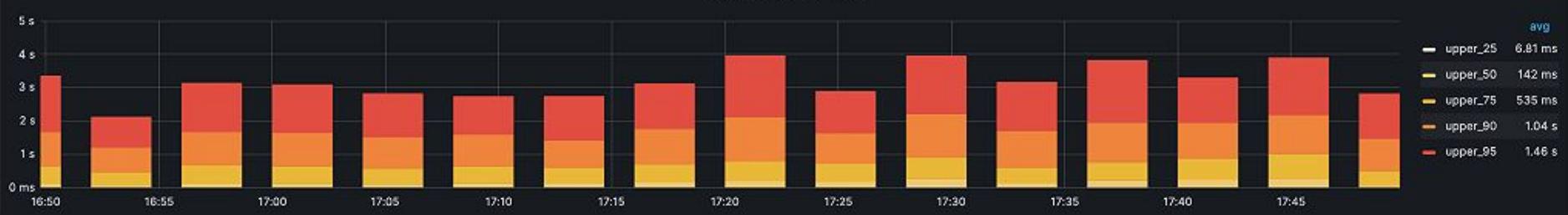
server requests



Google hits



client side full page load



"Building for accessibility ensures that no one is left behind due to physical or cognitive barriers"

diversity

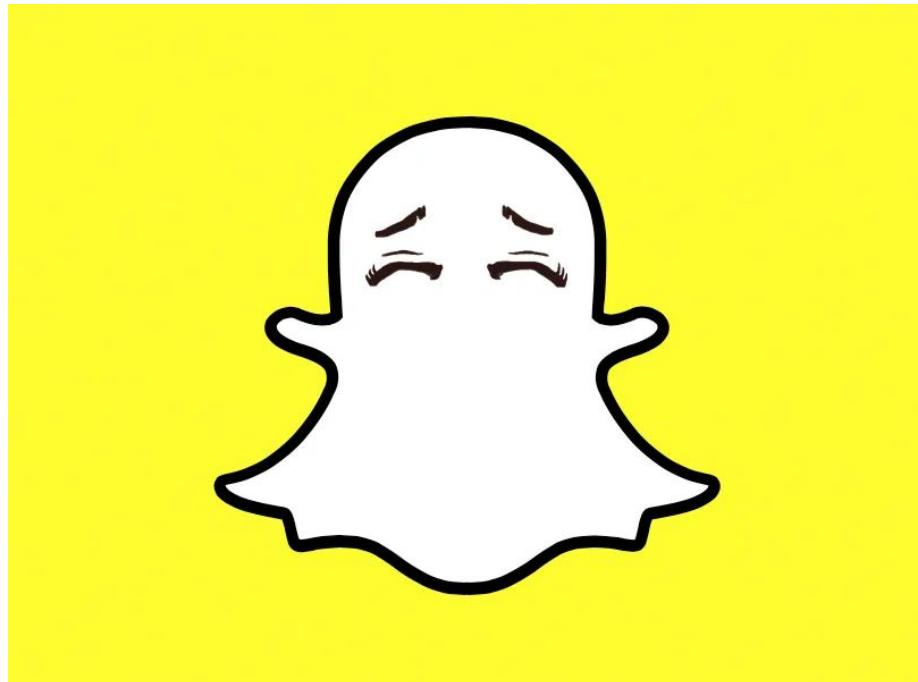
education
religion or belief
policy access values beliefs
equality
race fair
opportunities class justice
difference
age discrimination anti-oppressive practice
status poverty
sexual orientation
society
norms
rights sex agency
legislation
empowerment
disability
gender
ethnicity
youth work
celebrate

BIAS IN TECH PRODUCTS

1. Using training/testing with cultural bias.
2. Systemic barriers
3. Exclusionary Product Designs

Case Study: Snapchat's Filter Controversy

A culturally diverse team helps avoid missteps that alienate or offend global users.



Case Study: Addition of They/Them Pronoun

Name pronunciation

🔊 Your audio recording

Pronouns

She/Her

Please select

She/Her

He/Him

They/Them

Custom



“Clearly members want to feel empowered about how they self-identify” Bef Ayenew, Head of Engineering for Identity

Neglecting non-binary and gender-fluid users

```
if (gender != "Male" && gender != "Female") {  
    std::cout << "Invalid gender! Please enter Male or Female.\n";  
    return 1;  
}
```

Assuming non-global standards

```
//Assuming DD-MM-YYYY date format
std::cout << "Enter date of purchase: (separated by \"-\\\")";
std::cin >> date;

boost::split( dateArr, date, boost::is_any_of( "-" ) );
int month = atoi( dateArr[1].c_str() );
std::cout << "Thanks for the purchase" << std::endl;
```

Neglecting other cultural holidays and traditions.

```
int month = atoi( dateArr[1].c_str() );
std::cout << "Thanks for the purchase" << std::endl;
switch( month ) {
    case 1: std::cout << "Happy New Year!"; break;
    case 10: std::cout << "Happy Halloween"; break;
    case 11: std::cout << "Happy Thanksgiving"; break;
    case 12: std::cout << "Happy Christmas"; break;
    default: std::cout << "Good day!\n"; return 1;
}
```



D&I in the workplace

Diversity Beyond Numbers

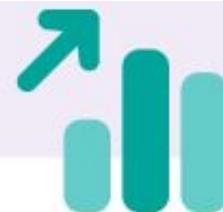
1

Hiring
Mindfully



2

Know your
Audience



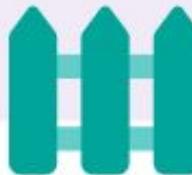
3

Respect &
belonging



4

Investing
in D&I



Who are we?



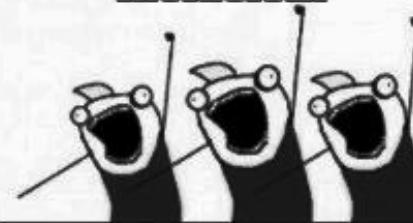
HR!



What do we want?



**Equity, Diversity and
Inclusion!**



When do we want it?



Always!



A close-up photograph of a man with long, light brown hair and a beard, smiling warmly at the camera. He is wearing a dark, textured jacket. In his right hand, he holds a small, colorful globe, which is partially visible. The background is slightly blurred, showing what appears to be a warm, indoor setting with soft lighting.

ONE DOES NOT SIMPLY...

BELONG. IT TAKES A VILLAGE
TO MAKE INCLUSION WORK.

Diversity Beyond Numbers

“Equal job opportunities != INCLUSION.”

Diversity Beyond Numbers

“When we prioritize diversity, we’re not just building better technology; we’re building a more equitable future”

Diversity Beyond Numbers

“Inclusion is not an option – it’s essential for building tech that truly serves all.”

CODE AND CULTURE

[1] Sage Journal: <https://journals.sagepub.com/doi/10.1177/17496020211037259>

[2] WHO Report: <https://www.who.int/health-topics/disability>

[3] UNDRR 2023 Survey:

<https://www.unrr.org/report/2023-global-survey-report-on-persons-with-disabilities-and-disasters>

[4] UNESCO 2023:

<https://www.unesco.org/en/articles/international-womens-day-new-factsheet-highlights-gender-disparities-innovation-and-technology>

[5] Out Now Global: <https://www.outnowconsulting.com/lgbt2020>

[6] Eurostat: <https://ec.europa.eu/eurostat>

[7] ILO, 2023:

<https://www.ilo.org/publications/flagship-reports/world-employment-and-social-outlook-trends-2023>

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[8] World Economic Forum: <https://www.weforum.org/>

[9] BCG Study: <https://www.bcg.com/publications/2018/how-diverse-leadership-teams-boost-innovation>

[10] Deloitte Survey:<https://www.deloitte.com/global/en/issues/work/content/genz-millennialsurvey.html>

[11] McKinsey & Company:

<https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-wins-how-inclusion-matters>



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sejal-gupta-she-her/](https://www.linkedin.com/in/sejal-gupta-she-her/)

Or Use this QR Code

Let's Gather Town!