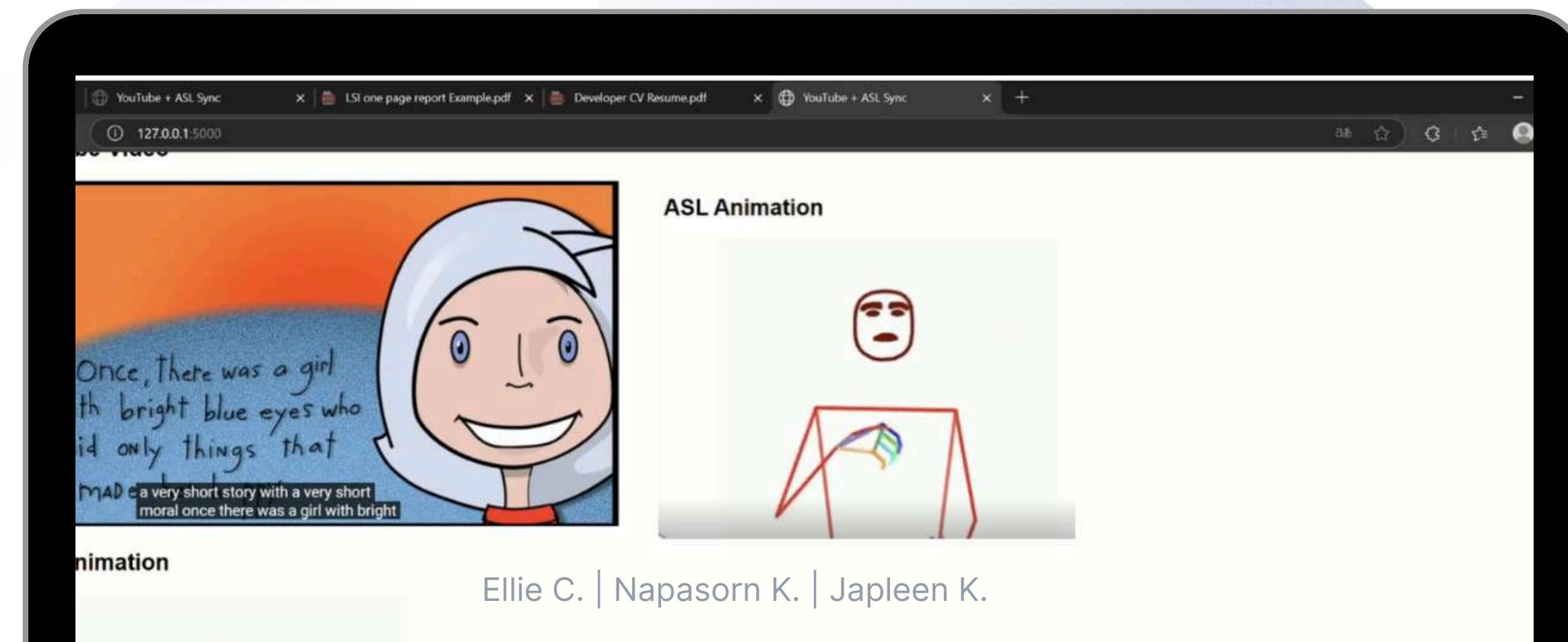


# ASLYtics

BRIDGING THE KNOWLEDGE GAP, SO EVERY VOICE IS SEEN.



Ellie C. | Napasorn K. | Japleen K.

RBC BOREALIS

ASLytics

Let's SOLVE it

# TEAM



**Ellie (Yi-Ting) Chang**

UofT CS (Specialist)/  
Data Science(Specialist)



**Napasorn Kao-ian**

UofT CS (Specialist)/  
Psychology (Minor)



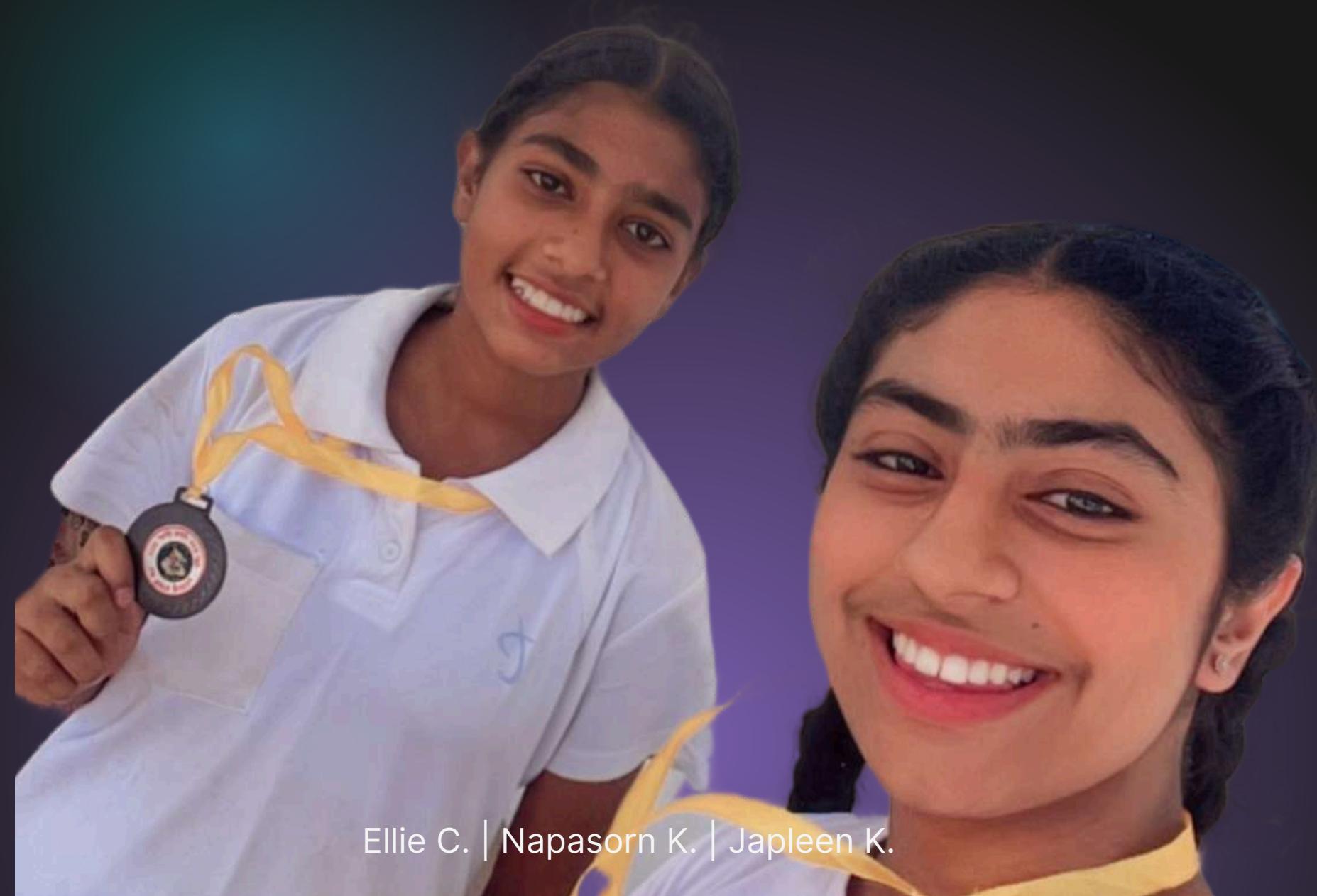
**Japleen Kaur**

UofT CS (Specialist)/  
Math (Minor)



# MOTIVATION

*“I don’t feel different—until I go online to learn.”*  
- Harnoor



Ellie C. | Napasorn K. | Japleen K.

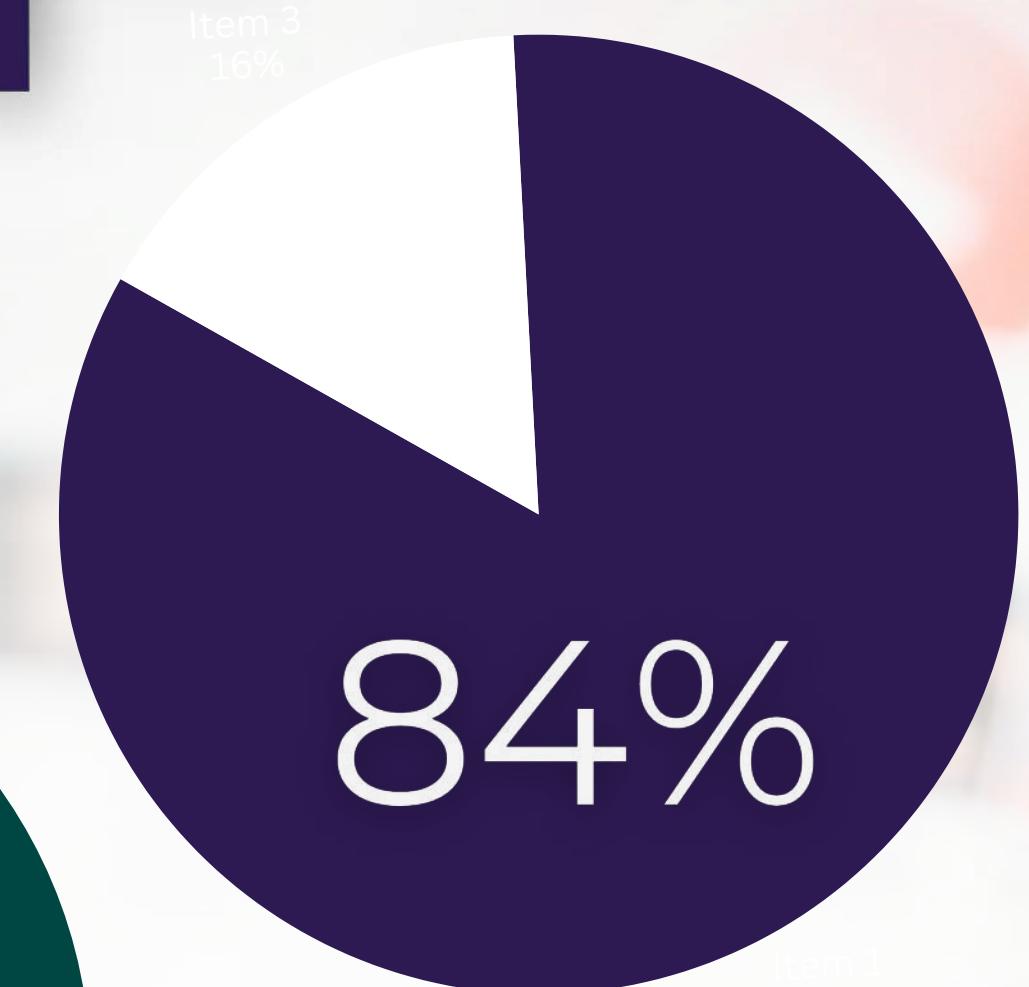
# PROBLEM

Media Access Group at WGBH. (2005). The Effectiveness of Closed Captioning.

5B+

videos watched  
daily; few have sign  
language support

Statista. (2025). YouTube usage statistics.  
World Federation of the Deaf (WFD). (2021).  
Accessibility for Deaf People.



84% of Deaf  
children couldn't  
keep up with  
caption speed in a  
study.

# WHY IS IT IMPORTANT?

430M+

people with  
hearing loss

World Health Organization. (2021).  
Deafness and hearing loss.

70M

deaf signers  
globally

United Nations. (2023). Sign up  
for sign language rights!

\$1.5M

money funded by  
Google for AI-  
powered sign  
translation

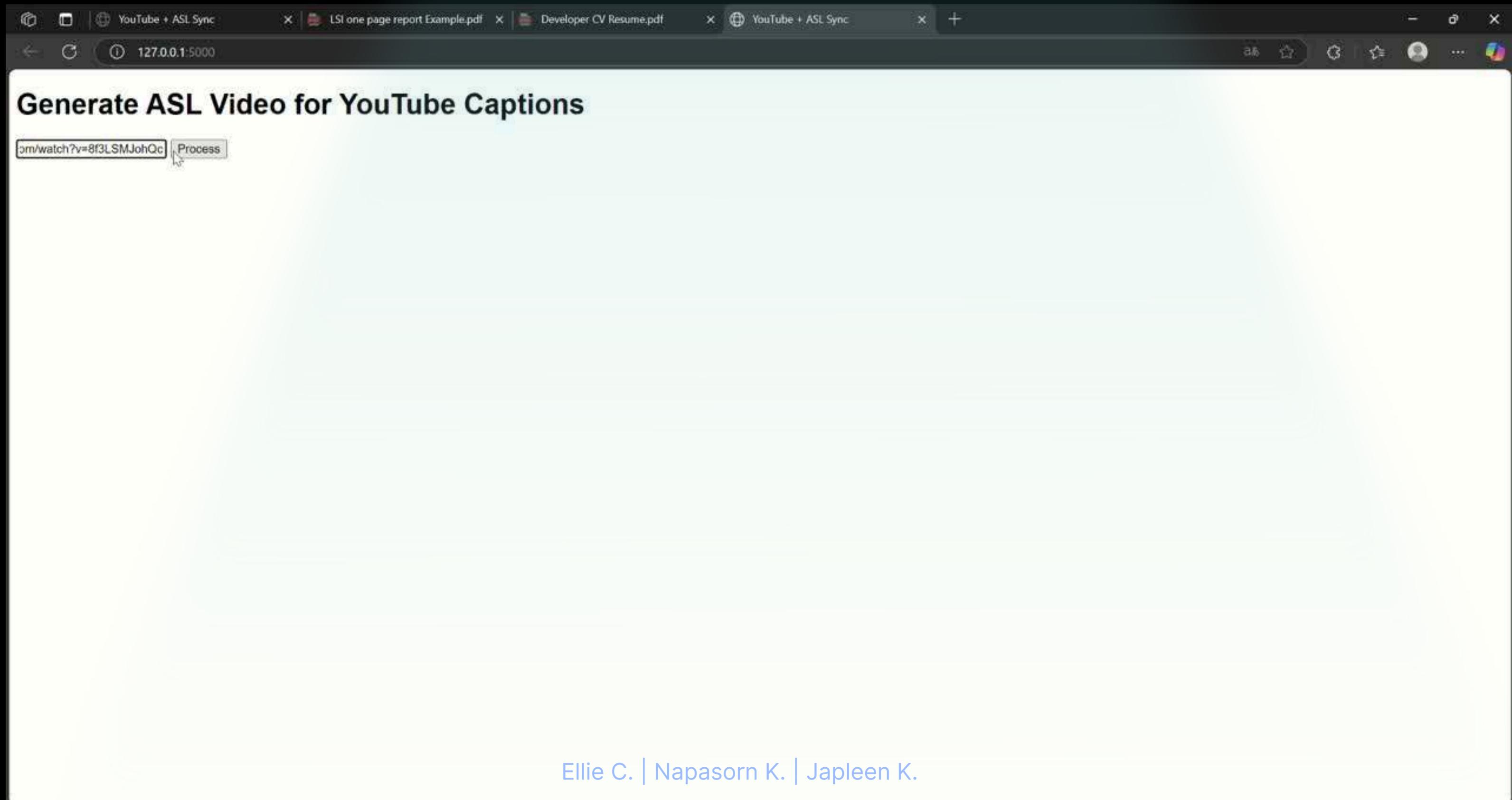
University of Surrey. (2023). Google  
supports University of Surrey in boosting  
internet accessibility for deaf people.

# GOALS

To bridge the knowledge gap for the  
Deaf community globally.



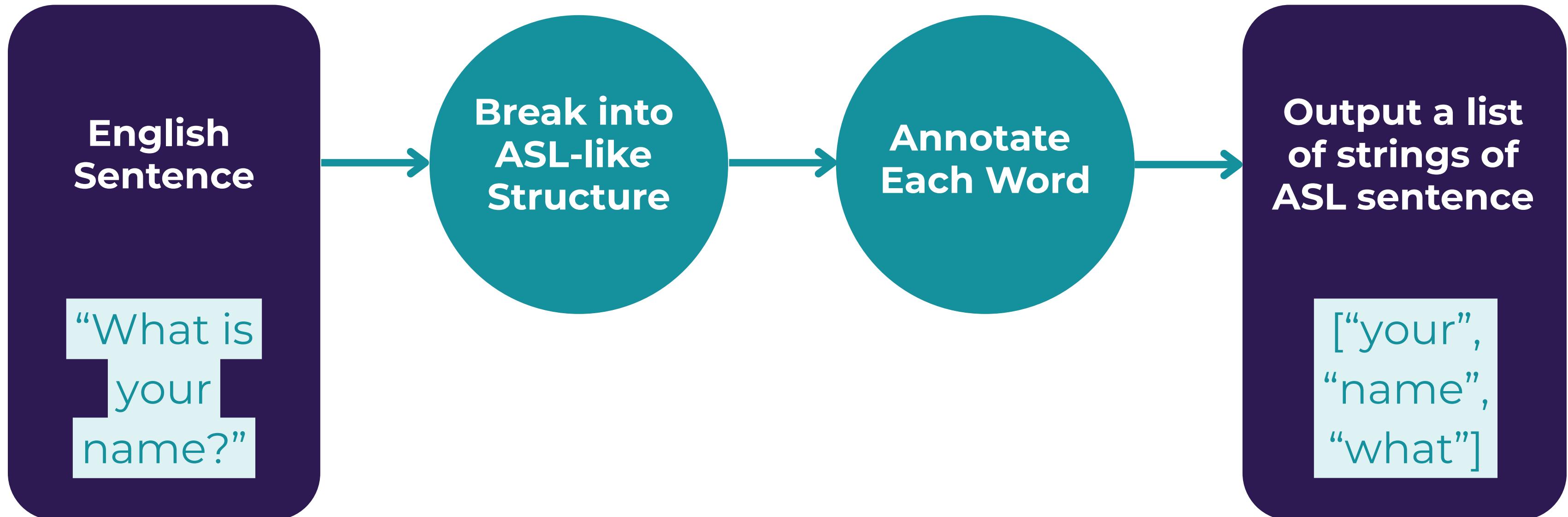
Real-Time YouTube  
Subtitle to ASL  
Translation Plugin



# SOLUTION



# TEXT - GLOSS



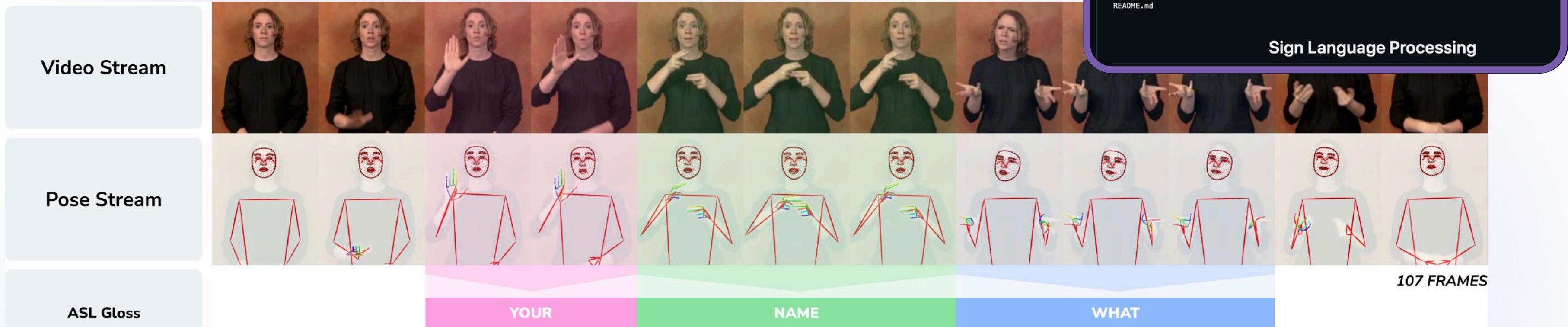
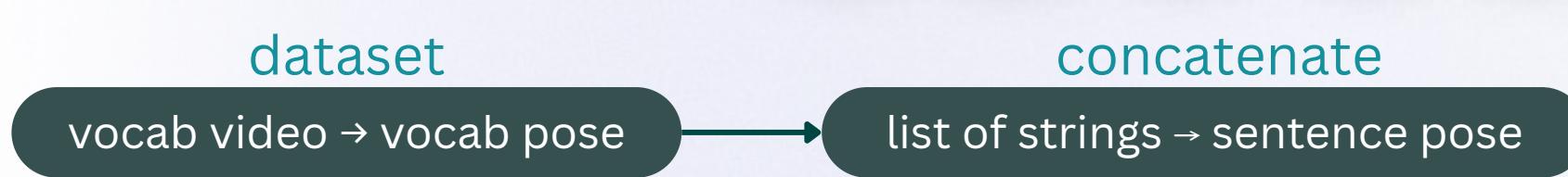
TEXT → GLOSS

GLOSS → POSE

POSE → VIDEO

YOUTUBE WEB

# GLOSS - POSE



credit: <https://research.sign.mt/#>

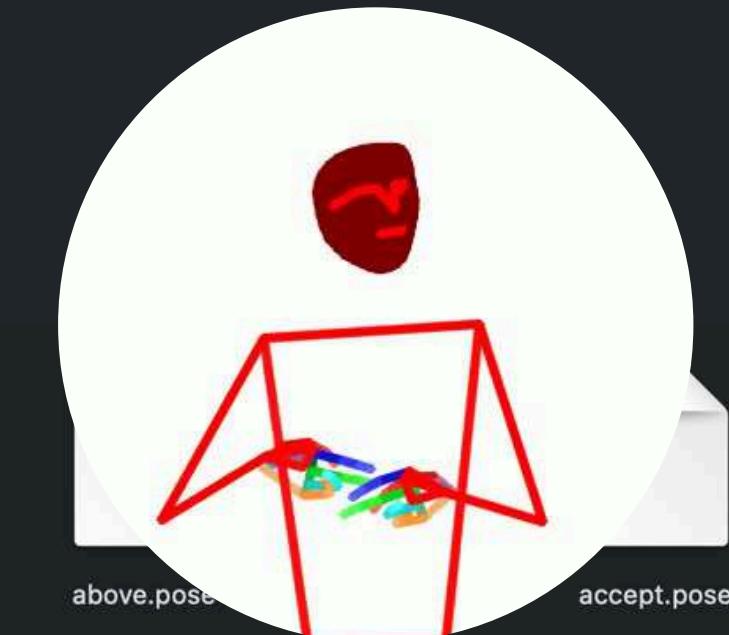
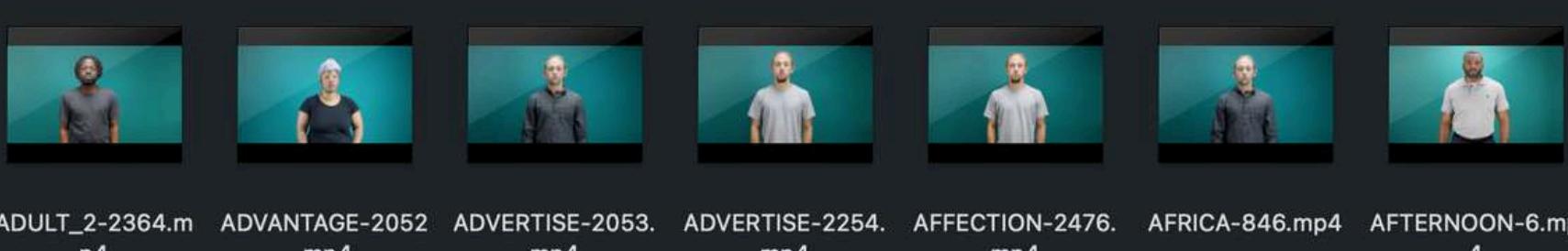
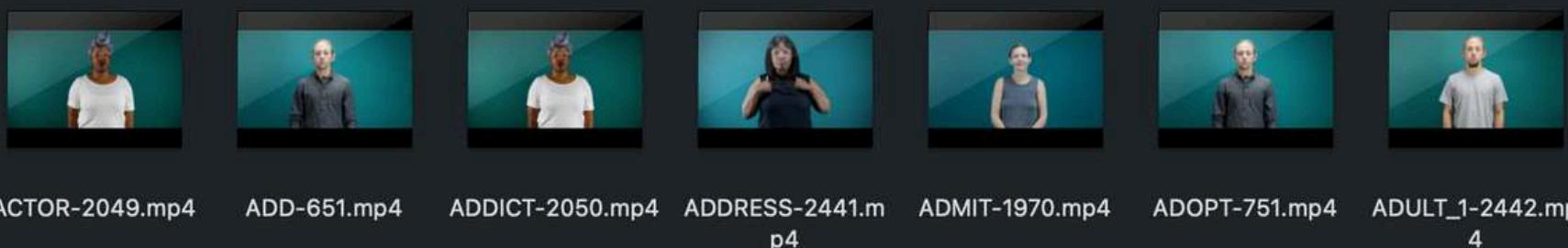
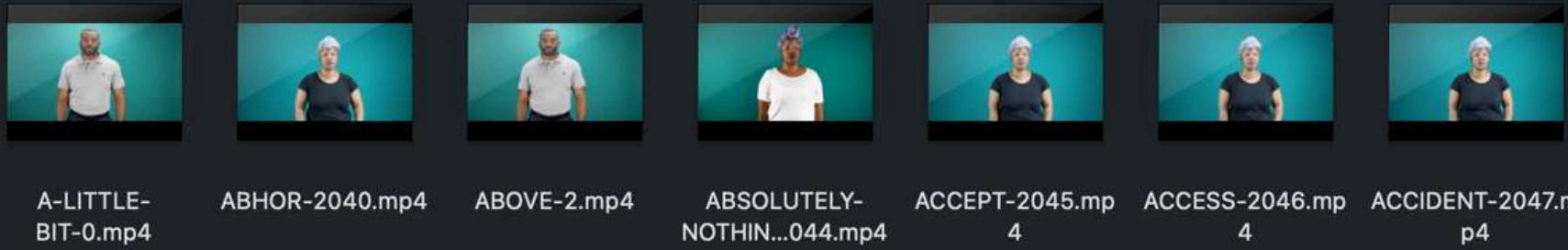


dataset

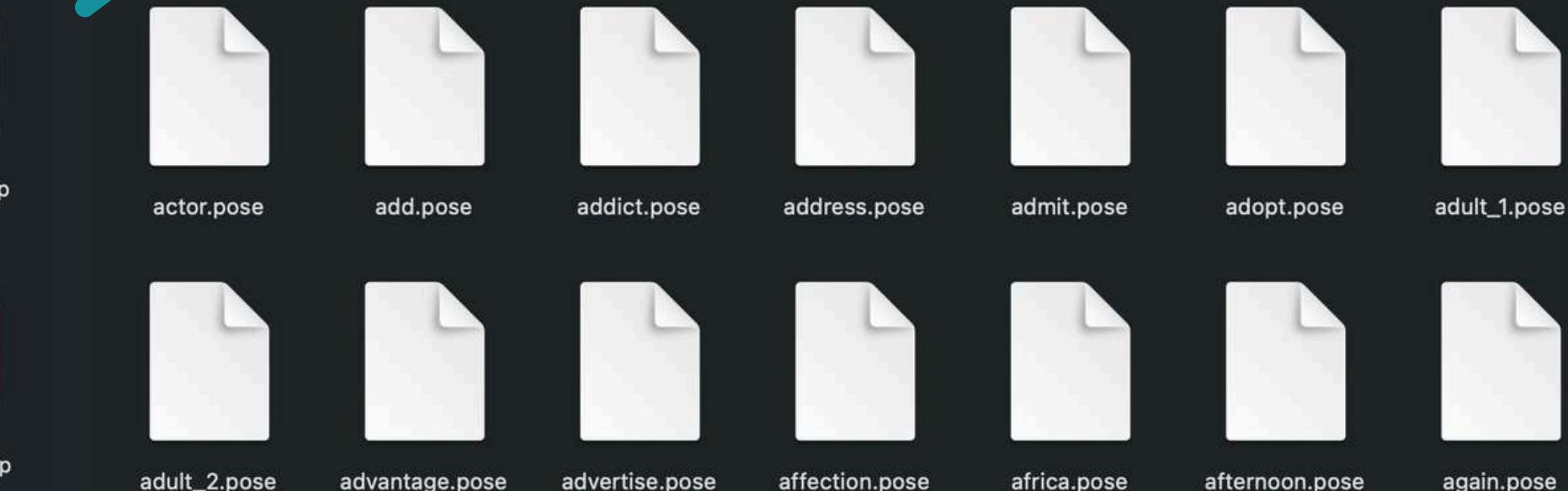
vocab video → vocab pose

concatenate

list of strings → sentence pose



## Pose Estimation



TEXT → GLOSS

GLOSS → POSE

POSE → VIDEO

YOUTUBE WEB

dataset

vocab video → vocab pose

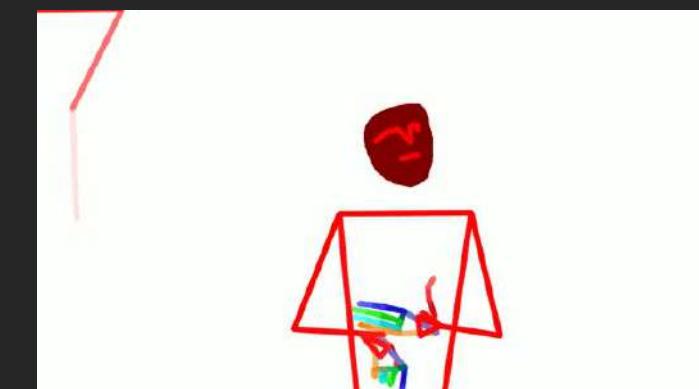
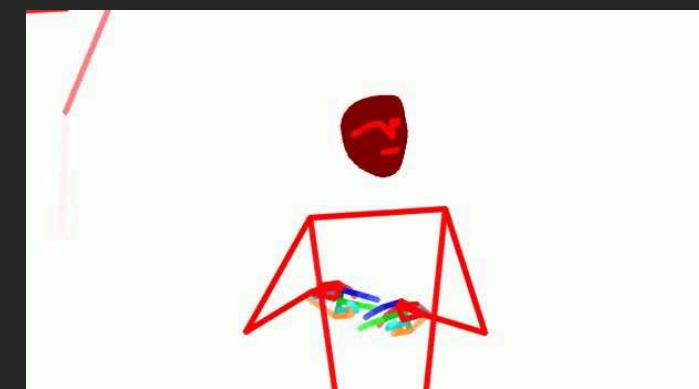
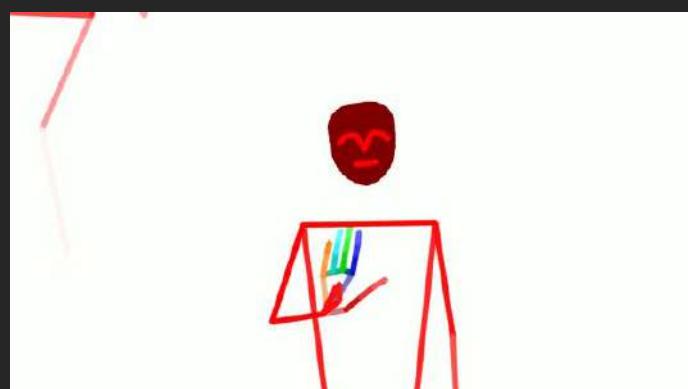
concatenate

list of strings → sentence pose

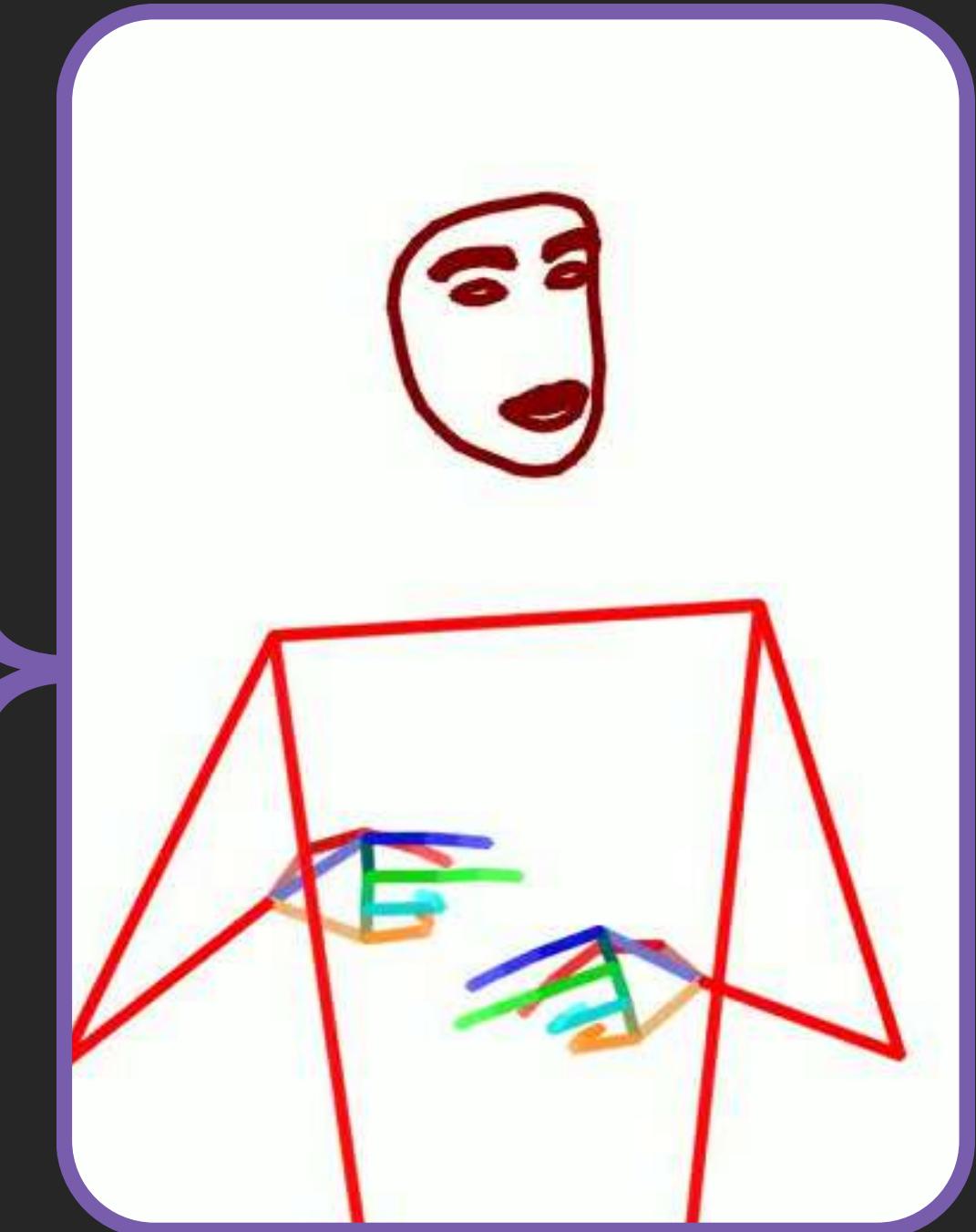
“What is your name?”



[“your”, “name”, “what”]



concatenate



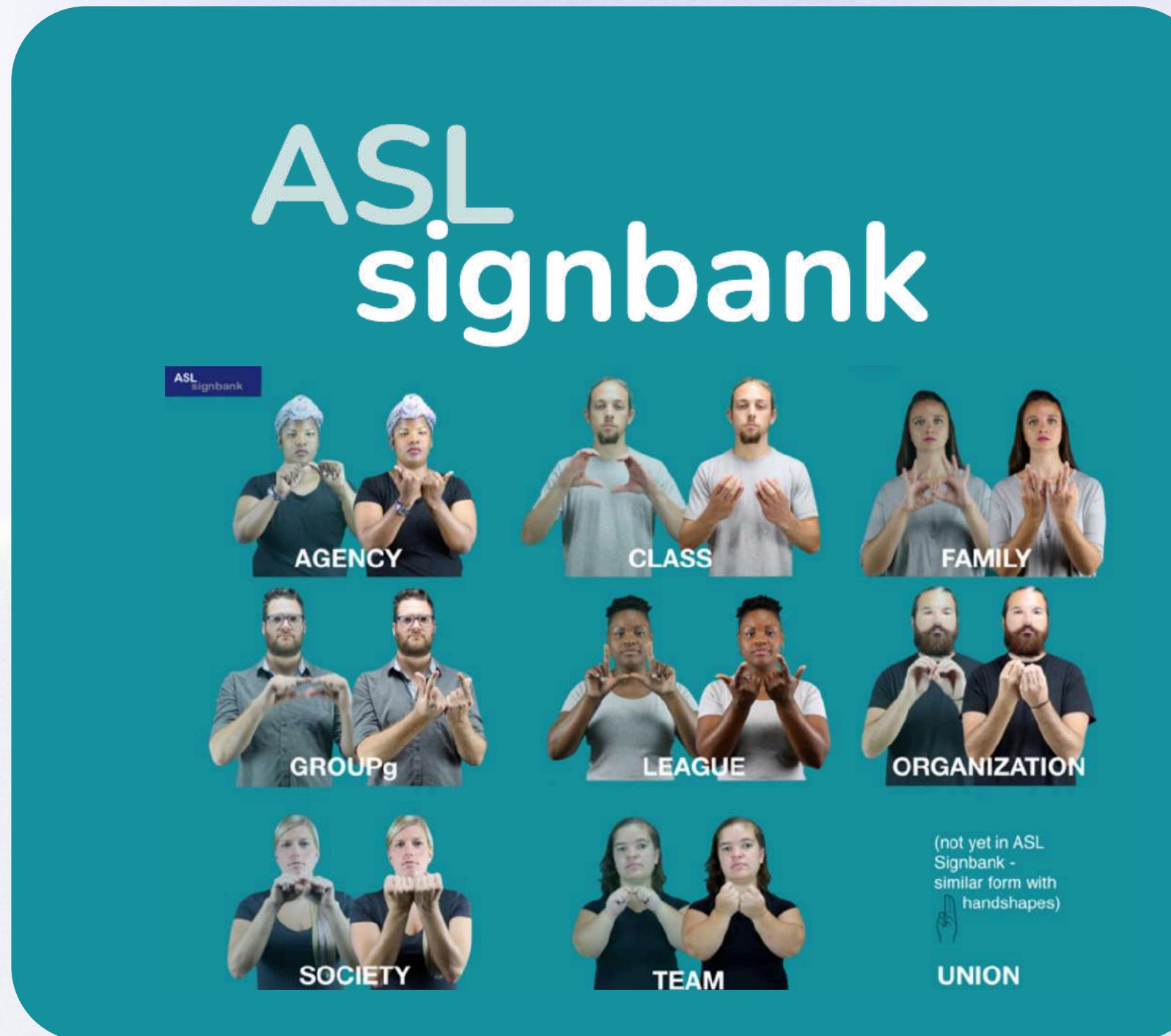
TEXT → GLOSS

GLOSS → POSE

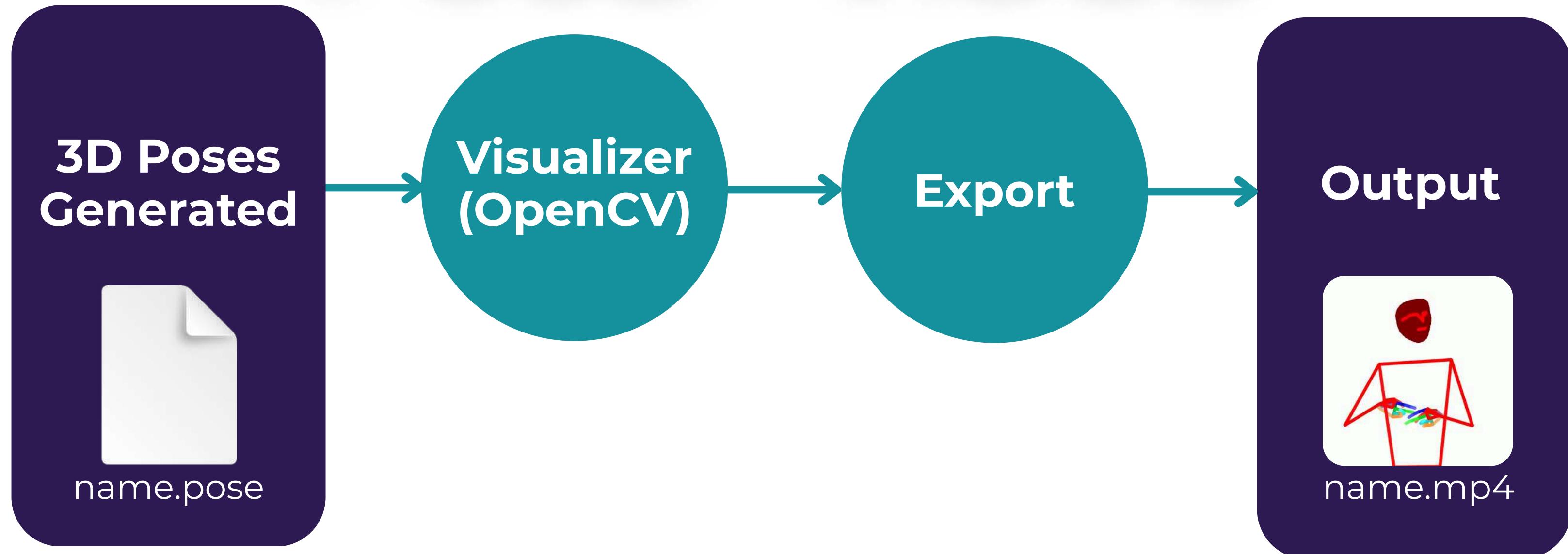
POSE → VIDEO

YOUTUBE WEB

# DATASET



# POSE - VIDEO



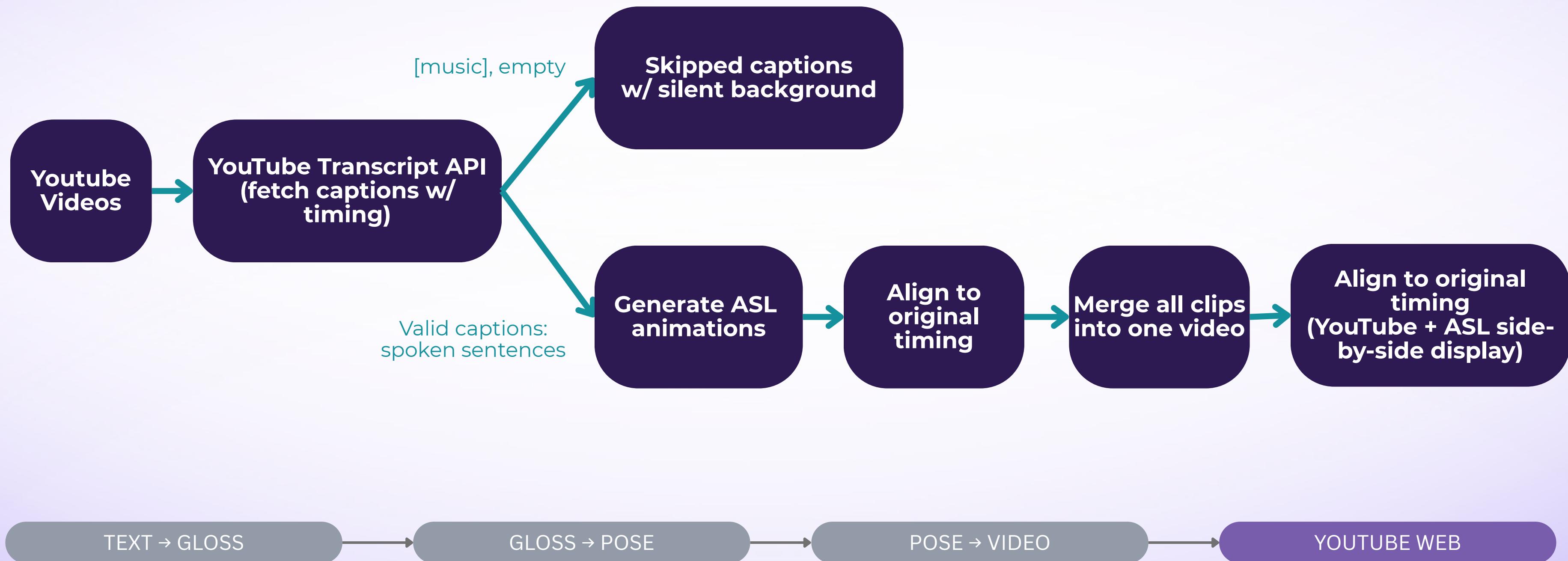
TEXT → GLOSS

GLOSS → POSE

POSE → VIDEO

YOUTUBE WEB

# YOUTUBE WEB



TEXT → GLOSS

GLOSS → POSE

POSE → VIDEO

YOUTUBE WEB

# CHALLENGES

## POSE

The pose sequences generated were not continuous

## LIBRARY

Some of the tools we used required different library versions

## ANIMATION

Synchronizing the generated ASL animation with the original YouTube video

## PIPELINE

For each sentence, we currently run the entire pipeline separately, which increases processing time

# WHAT WE LEARN

## System Integration

How to combine different open-source tools into one working pipeline.

## Modular Design

How breaking down the pipeline makes it easier to improve each part independently.

## Value

Not just about building cool tech, but about building with purpose.

# FUTURE VISION



## Playtesting

Partner with City of Toronto ASL Meetup to test with real users.



## Access to more websites

Expand reach by allowing users to add link to any video from any platform.



## More Languages

Increases language options from just English to ASL to other languages: Chinese, Spanish, French, etc.

# MENTORS

*"You didn't just mentor us—you inspired us."*

*Ellie C., Napasorn K., Japleen K.*



Ellie C. | Napasorn K. | Japleen K.