Zoom Lang Buddy

Team Members:

1. Ravi Rajappa
2. Maanya S
3. Shraddha Pandey
4. Gautham Vijayaraj

A project pitch by DIGITAL DEVILS 😈🔥

(or at least that's what it's supposed to be)

Arizona State University

Breaking The Sound Barrier in Zoom Classes

Imagine being in a lecture... but the only thing you hear is your stomach growling.

Many Deaf and Hard-of-Hearing students still miss context, emotion, and nuance in lectures.

Live captions ≠ ASL understanding.

Or Imagine if English isn't your first language. And you can't keep up with the classes.

Result? Confusion 😵, disengagement 😑, and graduation delays 👩‍🎓💔.

zoom

Arizona State University

SCENARIO 1

zoom

Arizona State University

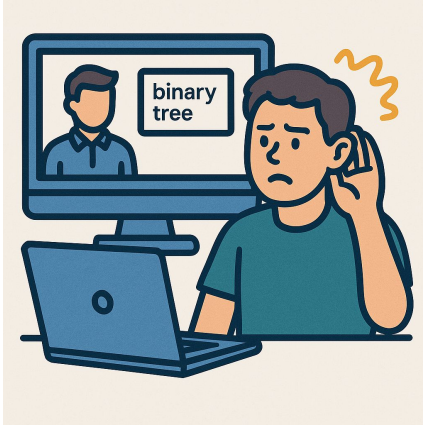
Meet Alex – CS Major, Passionate, Intelligent but Deaf

So Alex is a CS Student attending lectures on Zoom.

He couldn't keep track of the close captions. And guess what?

He missed technical terms like "binary trees" and "quicksort."

And now **nothing makes sense to him.**



zoom

Arizona State University

SCENARIO 2

zoom

Arizona State University

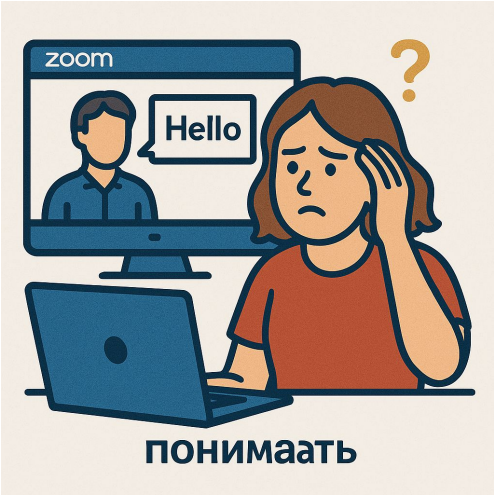
Meet Alena – CS Major, Russian, Smart but NOT FLUENT IN ENGLISH

English is not Alena's first language.

She needs to wait till she gets the zoom class's entire recordings and translate the transcripts.

She is new to this country and she is finding it hard to keep up with the professors.

She needs a fix that can help her keep up with the classes and **feel like home in a new country.**



zoom

Arizona State University

SOLUTION??

zoom

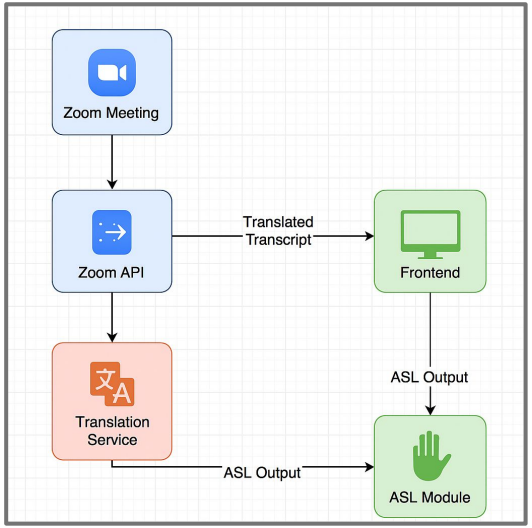
Arizona State University

LANG BUDDY – The Real MVP 💪

Presenting to you proudly Lang buddy - your new sleek companion window

A Real-time solution that captures prof's voice → live transcript → matches keywords to ASL signs.

And not only that, we can also translate those transcripts to any language that the student is prefers.



zoom

Arizona State University

Built on the shoulders of the RTSM

Our project began with the **RTSM (Real-Time Speech-to-Meaning)** base, which captures live Zoom audio and transcribes it instantly.

But we wanted more than just captions. We wanted it to **talk in hands and be multilingual.**

Zoom Speech → RTSM Event → Translation/ASL Conversion → Live Display

zoom

Arizona State University

THE IMPLEMENTATION

- So we hooked into the RTSM WebSockets and routing logic **(rtms.js)** to fetch and stream live Zoom transcription events.
- Redirected this to a Flask backend **(app.py)** that:
    - Handles translation (with Google Translator).
    - Converts speech into cleaned, displayable ASL letters.
- Built a responsive frontend **(index.html)** where users can choose the language that they prefer, "ASL" for example, and watch the magic unfold, character-by-character

zoom

Arizona State University

Add Ons

Added a **new Flask route** (/stream) to dynamically return real-time translated text.

Introduced **ASL character matching** using preloaded images (asl_images/*.jpeg).

Designed a playful **JS animation loop** that:

- Cleans the text.
- Renders images with slight popping animations for each character — like ASL karaoke

zoom

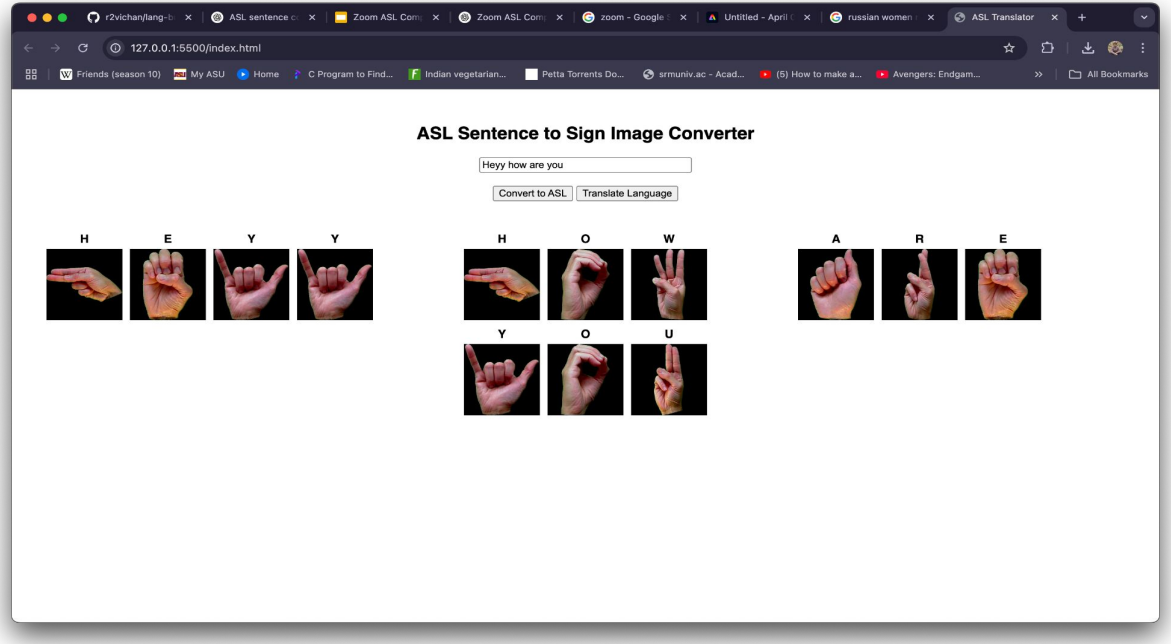
Arizona State University

RESULTS

zoom

Arizona State University

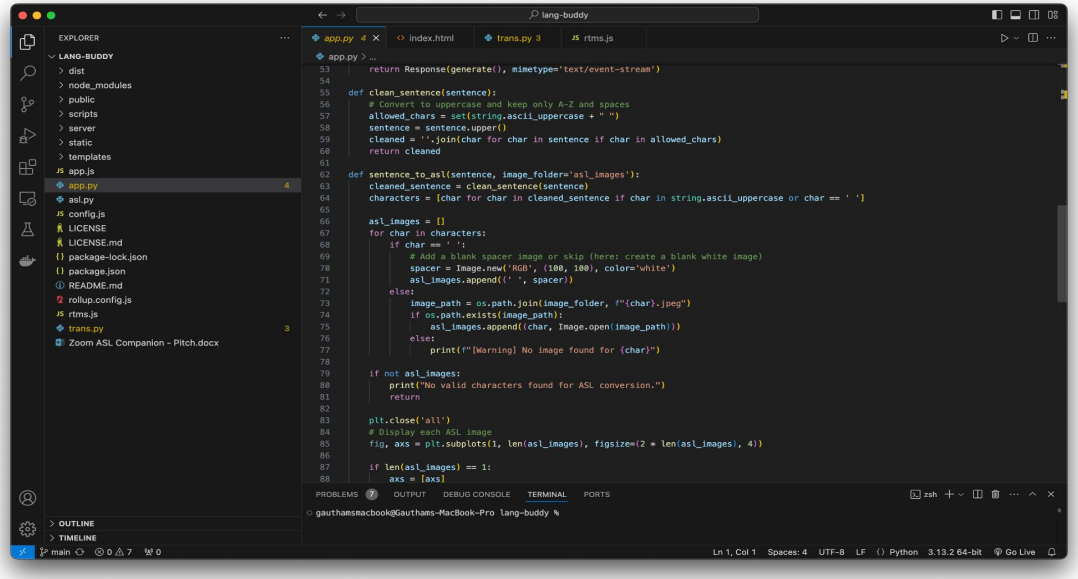
DUMMY CONCEPT (skip to the next)



zoom

Arizona State University

THE SOURCE CODES (check the repo for more)

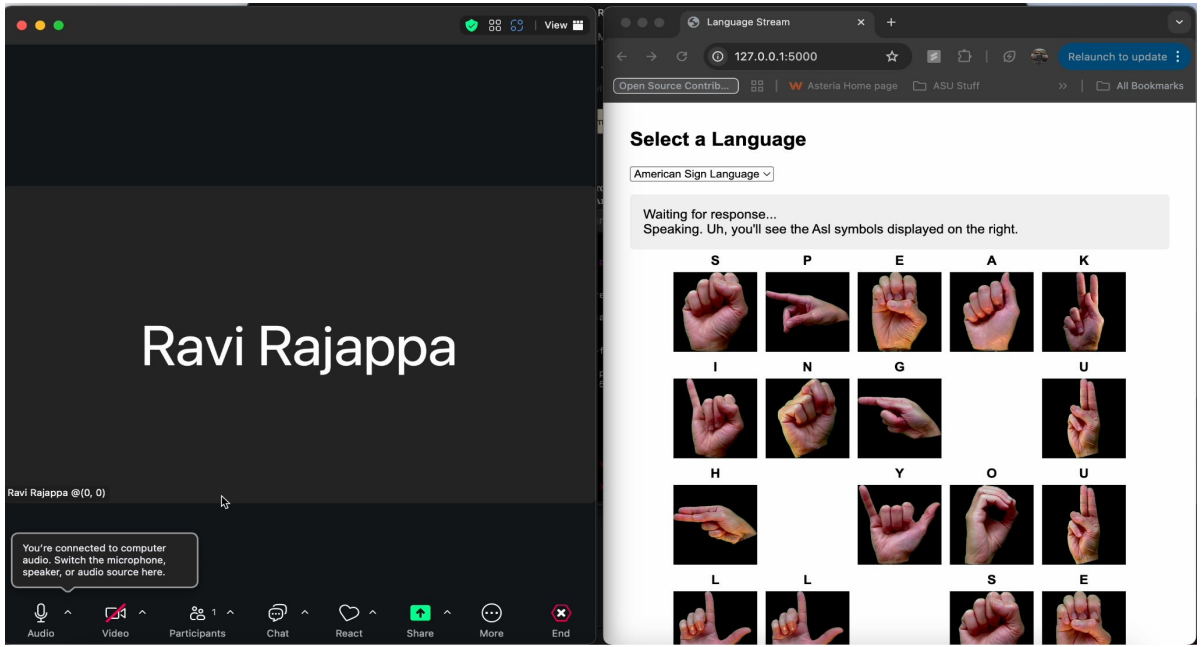


zoom

Repo Link: https://github.com/r2vichan/lang-buddy
Demo Link: https://www.youtube.com/watch?v=Eyd3IrurDew&ab_channel=RavichandranRajappa
Full Video Link: https://www.youtube.com/watch?v=eL80OAUZlGY&ab_channel=RavichandranRajappa

Arizona State University

Proof of Working Concept



zoom

Arizona State University

THANK YOU !!

zoom