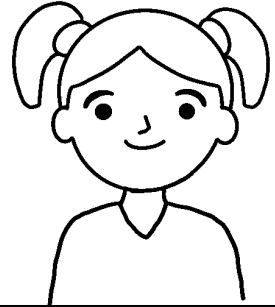# Open source AI hackathon lablab.ai

8 May 2023

American Sign Language Recognition System

lab
lab
ai

Team Members:

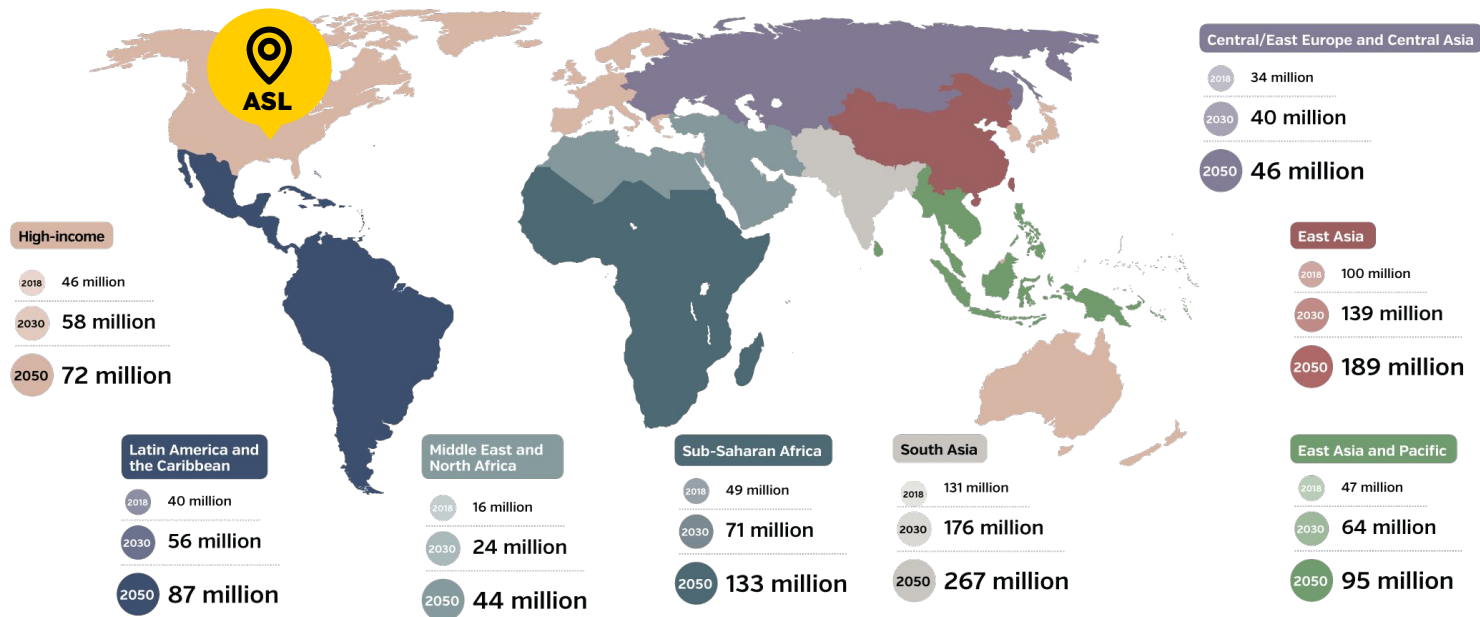*Mona Afanga, Muhammad Inaamullah, Fatbardh Smajli, Ego V, Diana Laza*

Presentation Outline

- [1] Background and Significance

- [2] Approach

- [3] Experimental Results and Comparison

- [4] Conclusion and Recommendations

- [5] Competitors

- [6] References

American Sign Language (ASL)

ASL

High-income
2018   46 million
2030   58 million
2050   72 million

Central/East Europe and Central Asia
2018   34 million
2030   40 million
2050   46 million

East Asia
2018   100 million
2030   139 million
2050   189 million

Latin America and the Caribbean
2018   40 million
2030   56 million
2050   87 million

Middle East and North Africa
2018   16 million
2030   24 million
2050   44 million

Sub-Saharan Africa
2018   49 million
2030   71 million
2050   133 million

South Asia
2018   131 million
2030   176 million
2050   267 million

East Asia and Pacific
2018   47 million
2030   64 million
2050   95 million

Based on Global Burden of Disease regions

*The current projections are based on the assumption that age-, gender- and region-specific prevalence of disabling hearing loss does not vary over time.

Projected number of people with hearing loss in different world regions until 2050

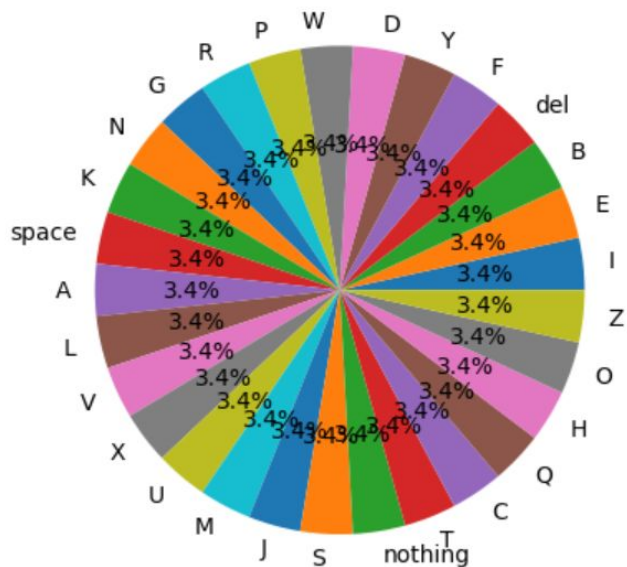**World Health Organization**

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Solution

A technology that will give the opportunity for people to **communicate easily in their own language** between one and other with more privacy and easier access.

Translate not only to understand what someone is saying but to understand what they are expressing thanks to the **emotion recognition.**
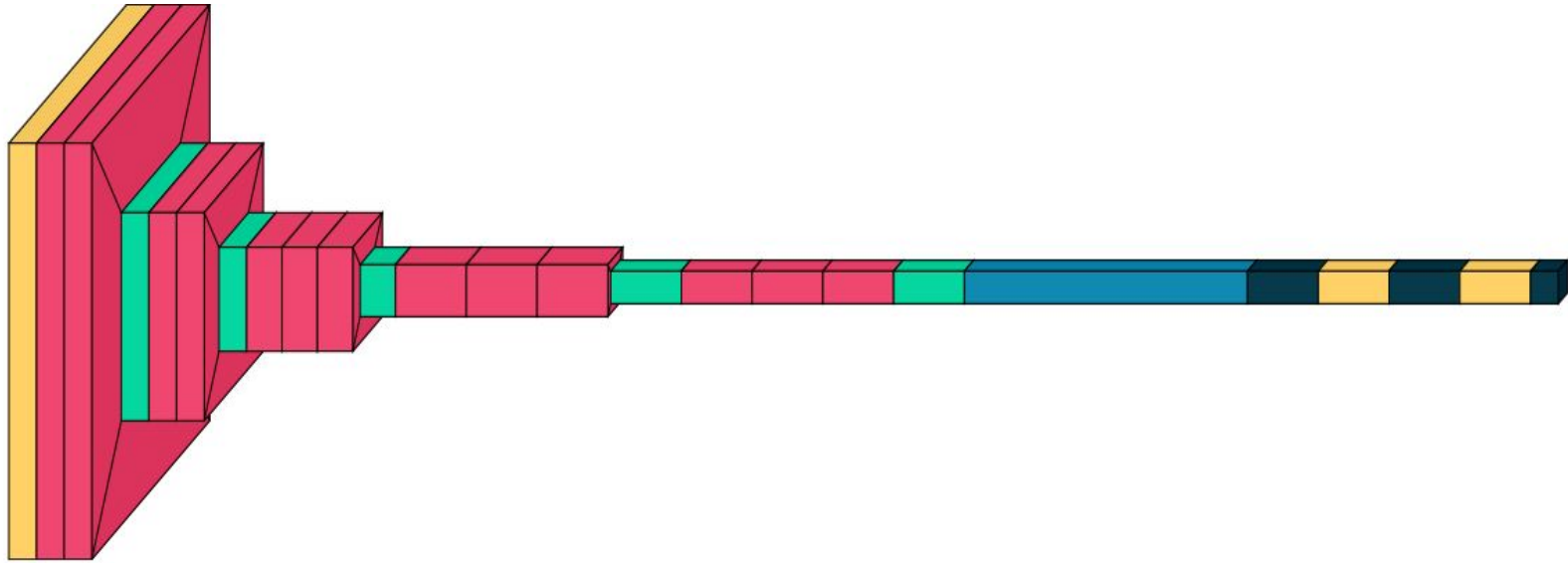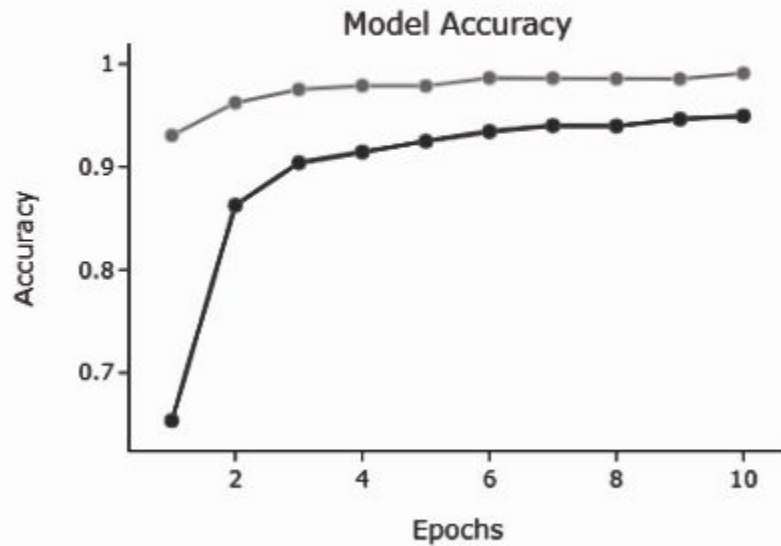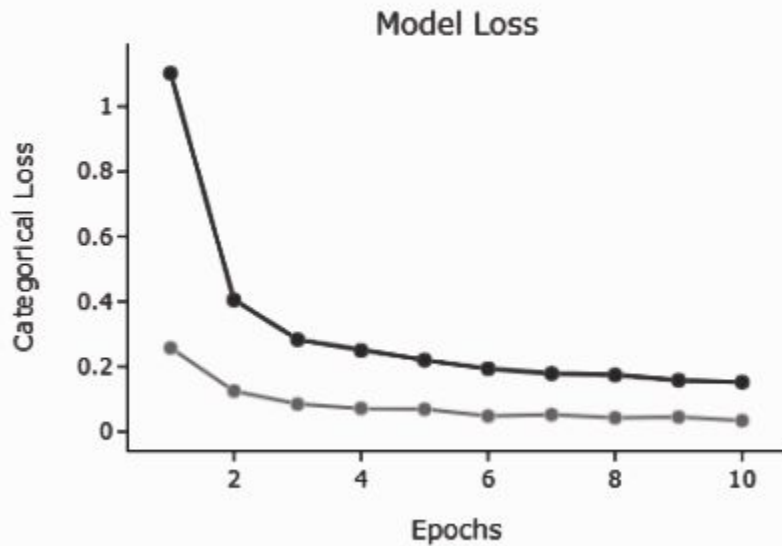
Training Dataset

Testing Dataset

InputLayer Conv2D MaxPooling2D Flatten Dense Dropout

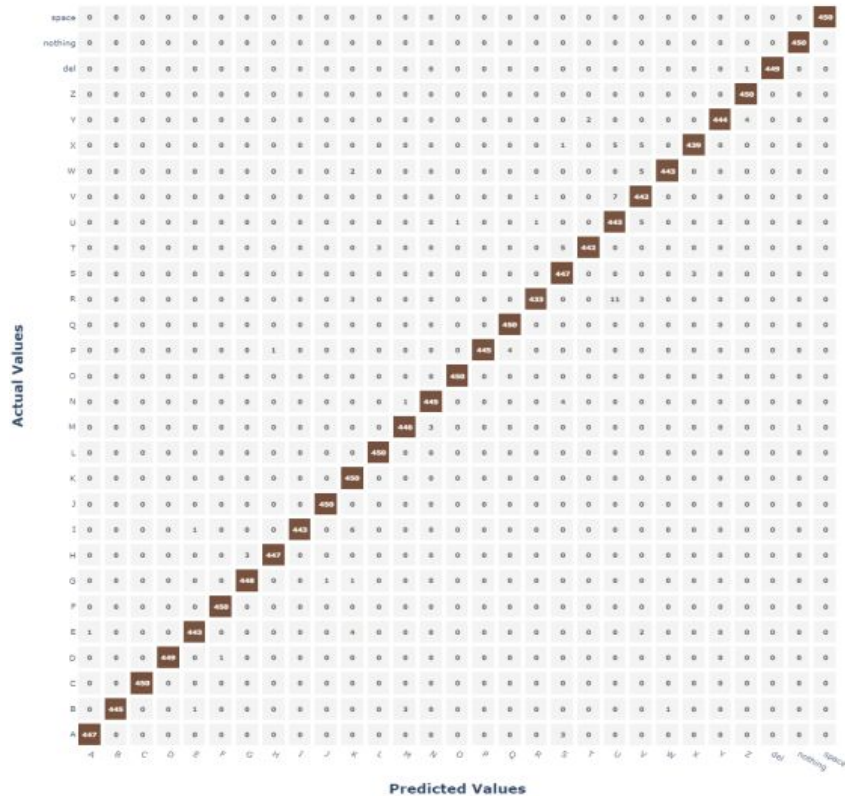**Convolutional Neural NetworkArchitecture**

8

Results

Training Loss and Metrics

Confusion Matrix

VGG–16: 99%

Accuracy!

Conclusion and Future Recommendations

Conclusion

- Even though this technology is currently being developed by different teams, we only have one competitor that is also introducing emotion registration.

Recommendation

- In a future it would be interesting to work on other sign languages like the BSL since this technology has not yet being studied on it.

Our competitors

	SIGNALL	US
● ASL	✓	✓
● Emotion recognition	✓	✓
● Real time translation	✓	✓
● No extra equipment	✗	✓
● Sign to text	✓	✓

References

- [1] World Health Organization: https://www.who.int/
- [2] Dataset: https://www.kaggle.com/datasets/grassknoted/asl-alphabet
- [3] SignAll: https://www.signall.us/.

Get to know us

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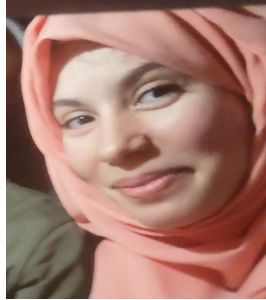
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Thank you!

You can find our repository at: https://github.com/ego/cbq