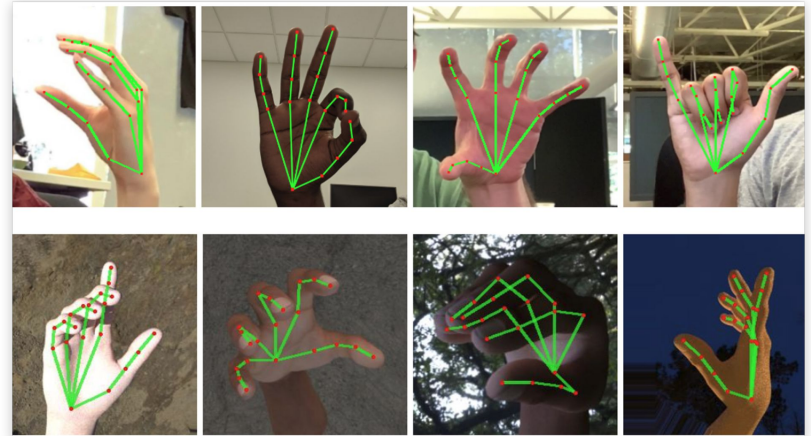


Finger Language Recognition for Remote Communication

Prosenjit Das
Kaibiao Ruan

Finger Language Recognition

Inspiration : Helping **Blind or Deaf** to get **technological experience** by standard finger language gesture. Also, people working in **High Noise environment or Biomedical lab**, where employees are prefer to communicate remotely without touch





1. Intro

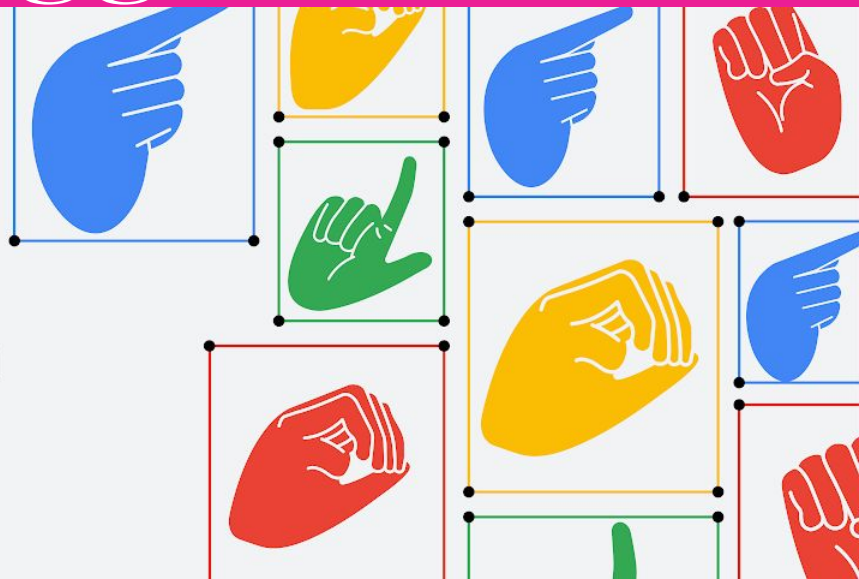
Finger Language can communicate with

- **Google API / Chat GPT**
Browse Web
- **Control IOT Devices Remotely**
Control by remote command
- **Single Remote Device**
Same language multiple devices
- **Finger to Native Language**
Help Language Conversion

Collected Standard Dataset from Google Kaggle

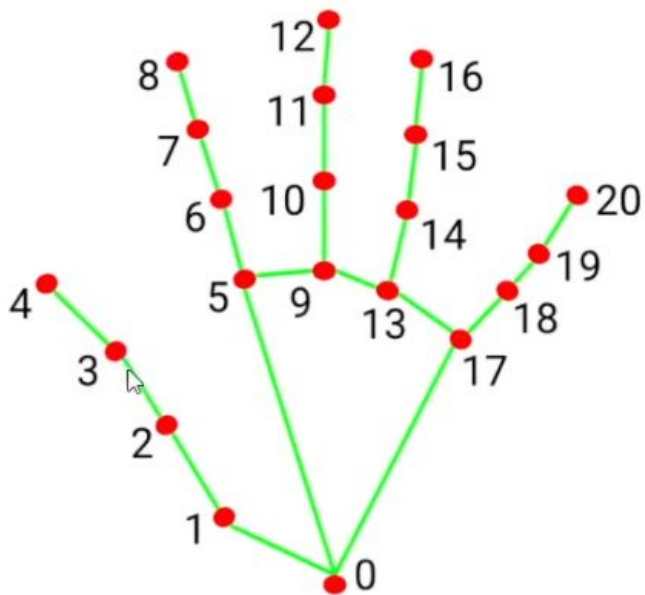
Google

**American Sign Language
Fingerspelling Recognition**



Standard Finger Coordinates

2. Draw Hands

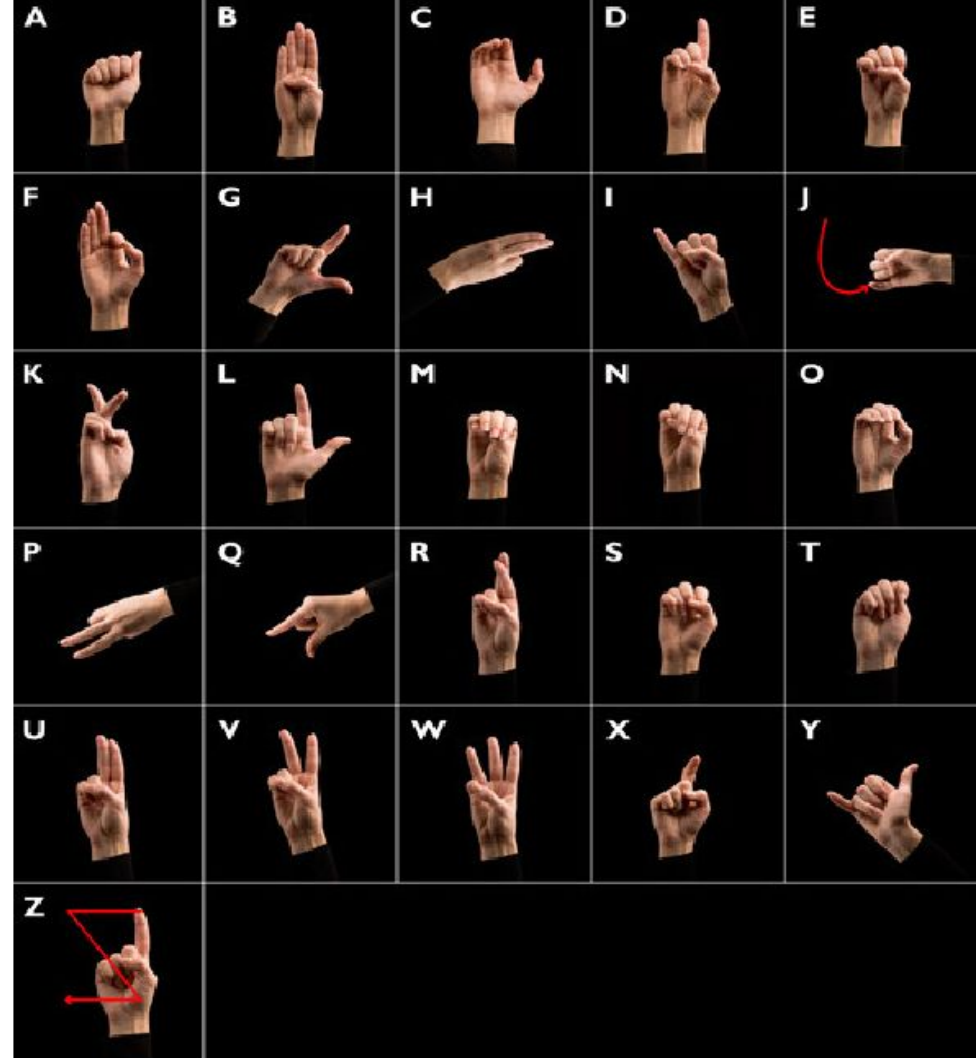


0. WRIST
1. THUMB_CMC
2. THUMB_MCP
3. THUMB_IP
4. THUMB_TIP
5. INDEX_FINGER_MCP
6. INDEX_FINGER_PIP
7. INDEX_FINGER_DIP
8. INDEX_FINGER_TIP
9. MIDDLE_FINGER_MCP
10. MIDDLE_FINGER_PIP

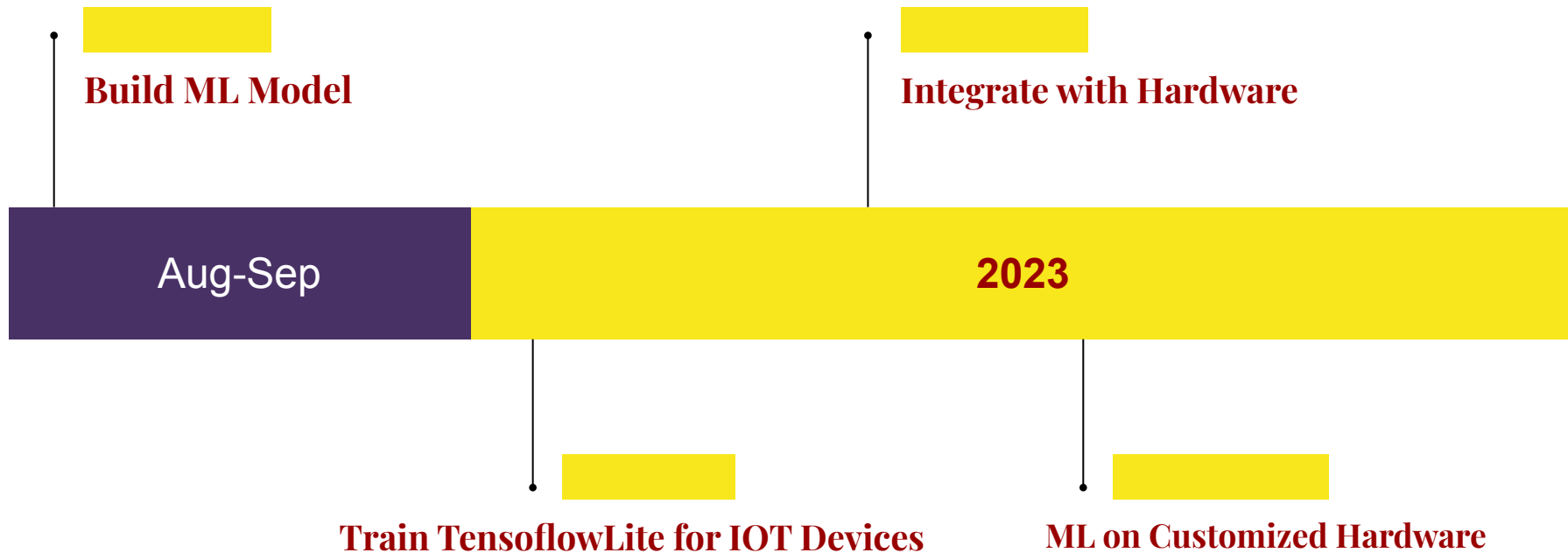
11. MIDDLE_FINGER_DIP
12. MIDDLE_FINGER_TIP
13. RING_FINGER_MCP
14. RING_FINGER_PIP
15. RING_FINGER_DIP
16. RING_FINGER_TIP
17. PINKY_MCP
18. PINKY_PIP
19. PINKY_DIP
20. PINKY_TIP

```
In [7]: cap = cv2.VideoCapture(0)
```

MediaPipeline captures finger position and co-ordinate. Once co-ordinates have enough data, pass that information to **Tensorflow ML model** to build single command.



Milestones



Technology

**Kaggle
Dataset**

**Media
Pipeline**

**Tensorflow
/ Python**

Helmet



Google Specs



Bio-laboratory

