

# Mobile Chinese Translator

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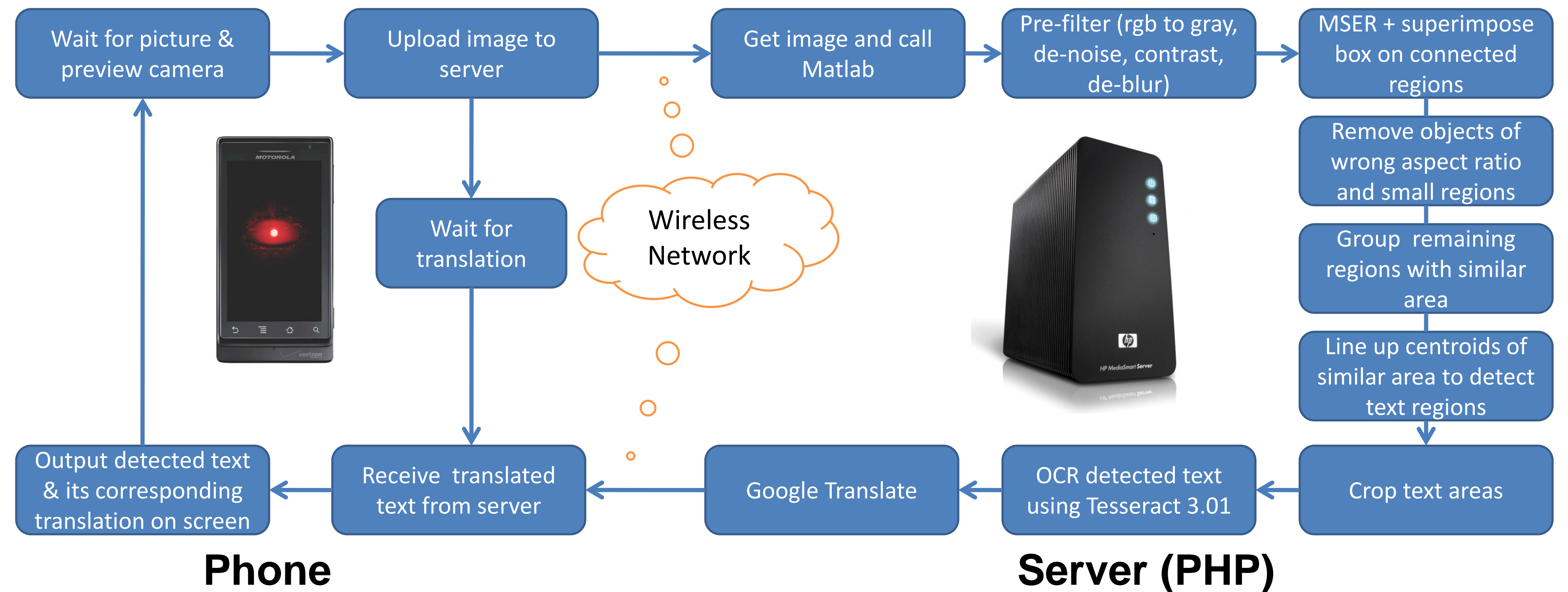
## Motivation

- To get an Android-based translation app for Simplified Chinese text.
- Inspired by advent of technology which enables us to break down language barriers. Ex: World Lens iPhone app (which unfortunately does not support Chinese).
- Intended for travelers and those who want to speed up learning Chinese.

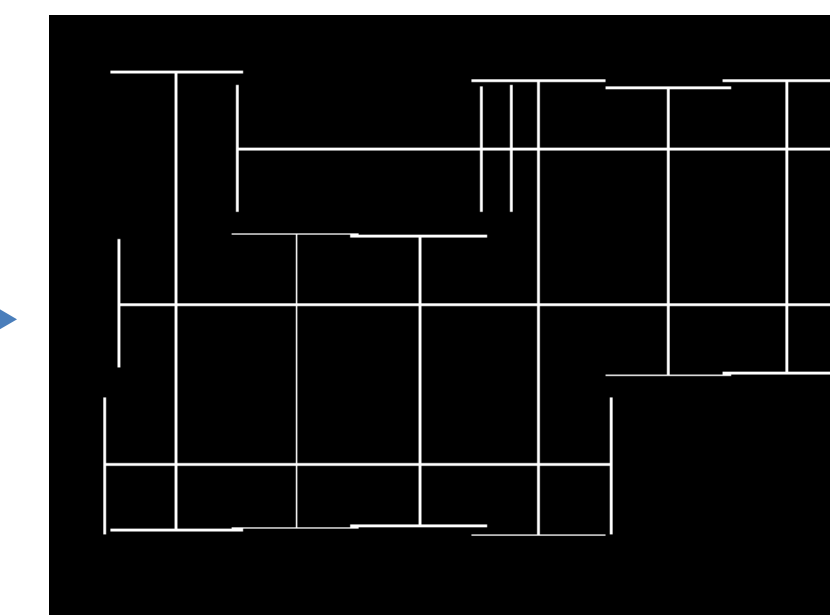
## Conclusion

- Applying this to Chinese characters poses a unique set of problems:
  - Unlike English, Chinese contains over 20k characters, causing OCR to be too slow to run completely on a mobile phone
    - Over 15 seconds for OCR alone, not even including detection, extraction, & filtering)
  - Chinese characters can have many components making up a single character
    - Causes difficulties in differentiating between parts of a character and general clutter/noise
- Different fonts and character-to-character spacing pose great challenge to the robustness of algorithm

## System & Algorithm Flow



Good:



请您爱护和保  
护卫生创建优  
美水环境

Text extracted & cleaned up for OCR

MSER results overlaid with blobs, grouped and lined up according to centroid location

Not so good:



停

屈 ...???

Character successfully extracted, but OCR failed!



No errors in extraction, OCR, or translation