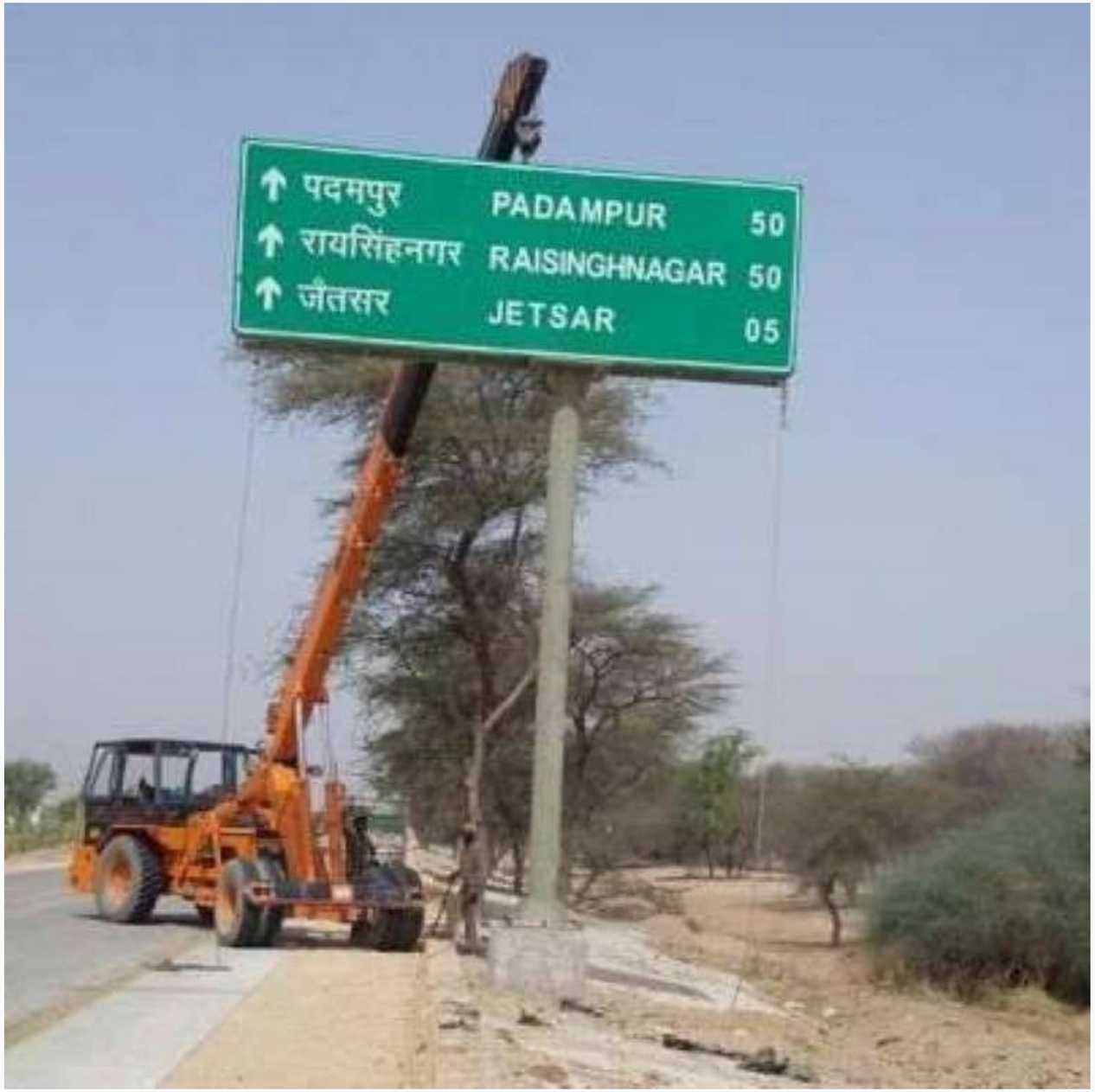
A case for EVs to make travels more accessible: removing the language barrier

Team ShinChan

The problem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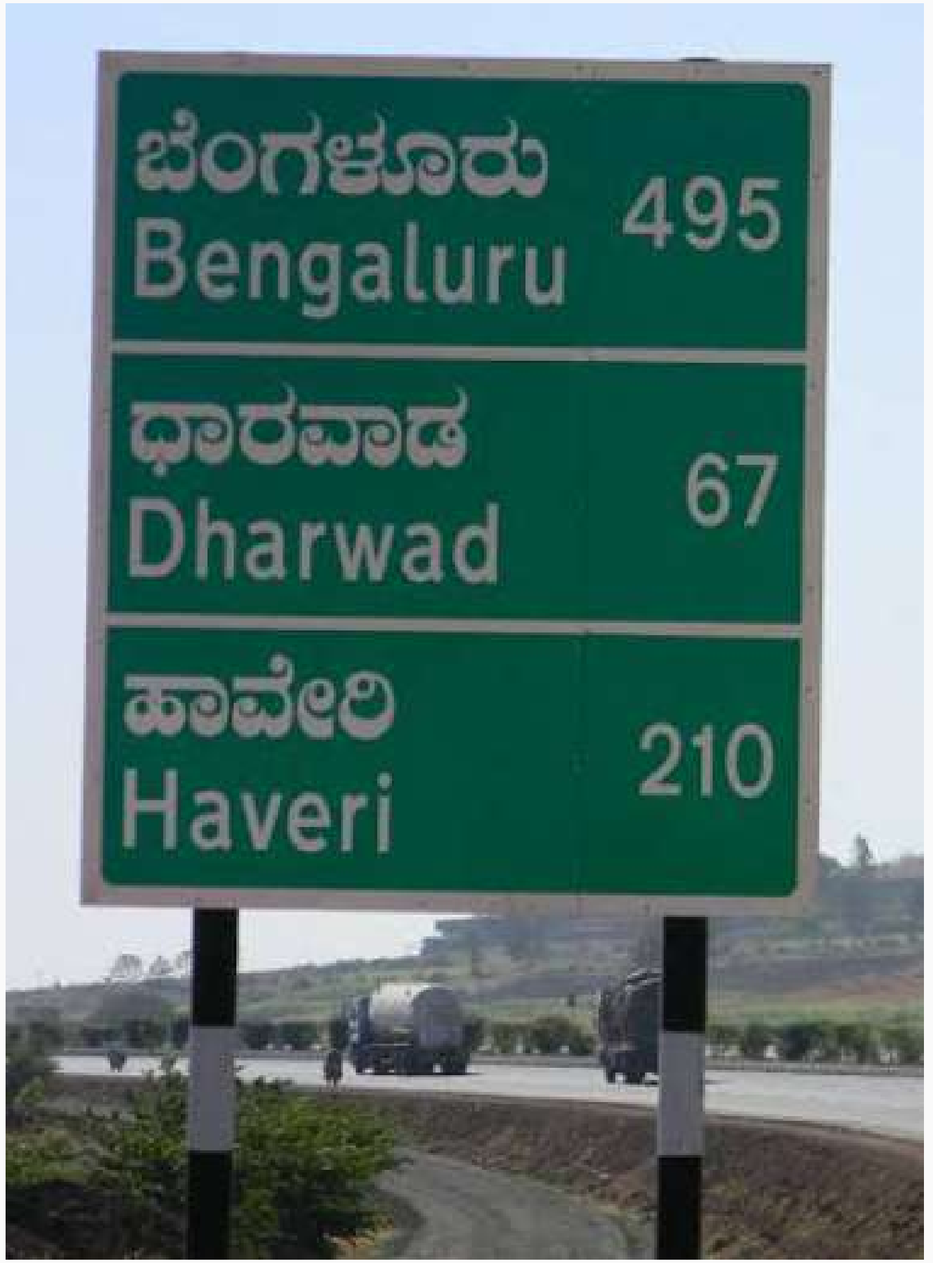
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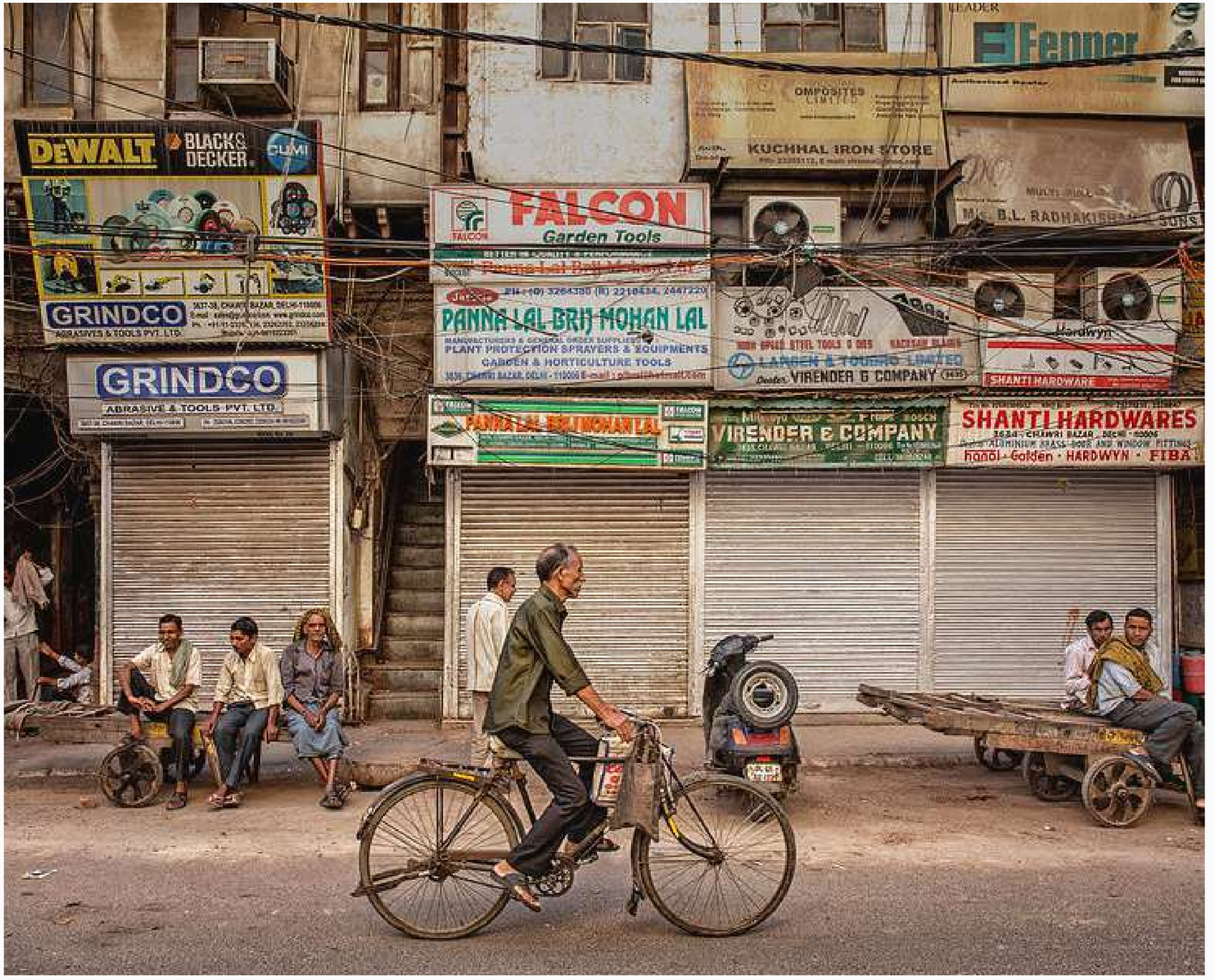
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FALCON
Garden Tools
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PLANT PROTECTION SPRAYERS & EQUIPMENTS
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SHANTI HARDWARE
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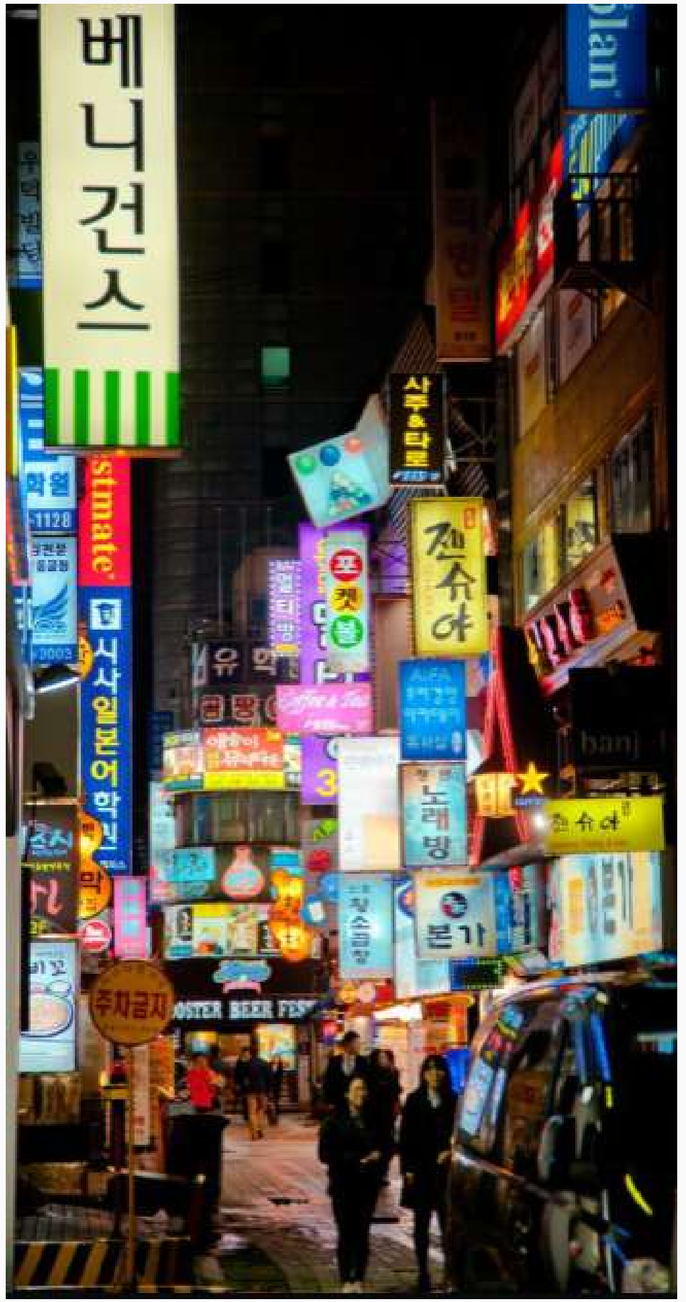

베니건스

A solution: CV, NLP

The pipeline

Detecting text

Camera feed is scanned each frame for billboards etc, their text is extracted

Machine Translation

The text can be translated from the source language (can be auto detected) to any target language

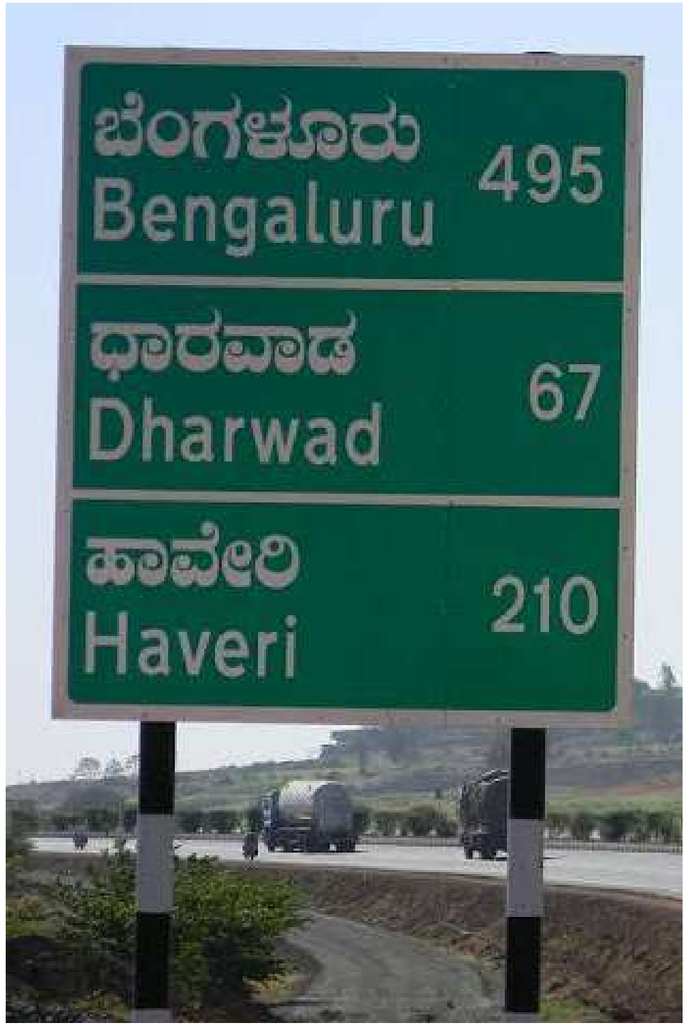
Text to Speech

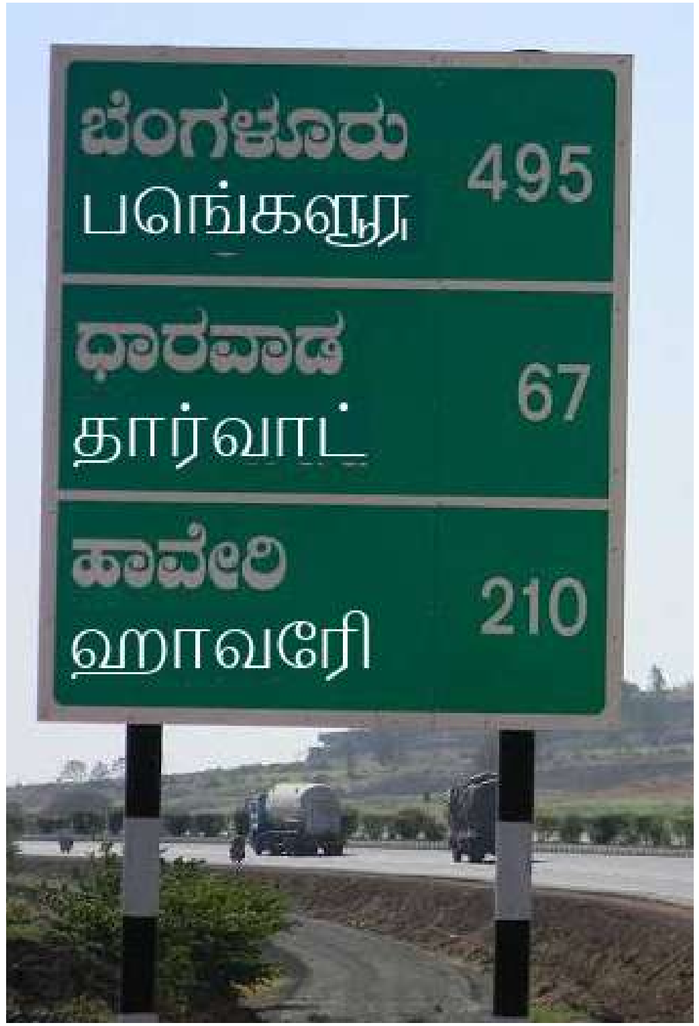
To avoid distracting the driver with visuals, the information is read out to them

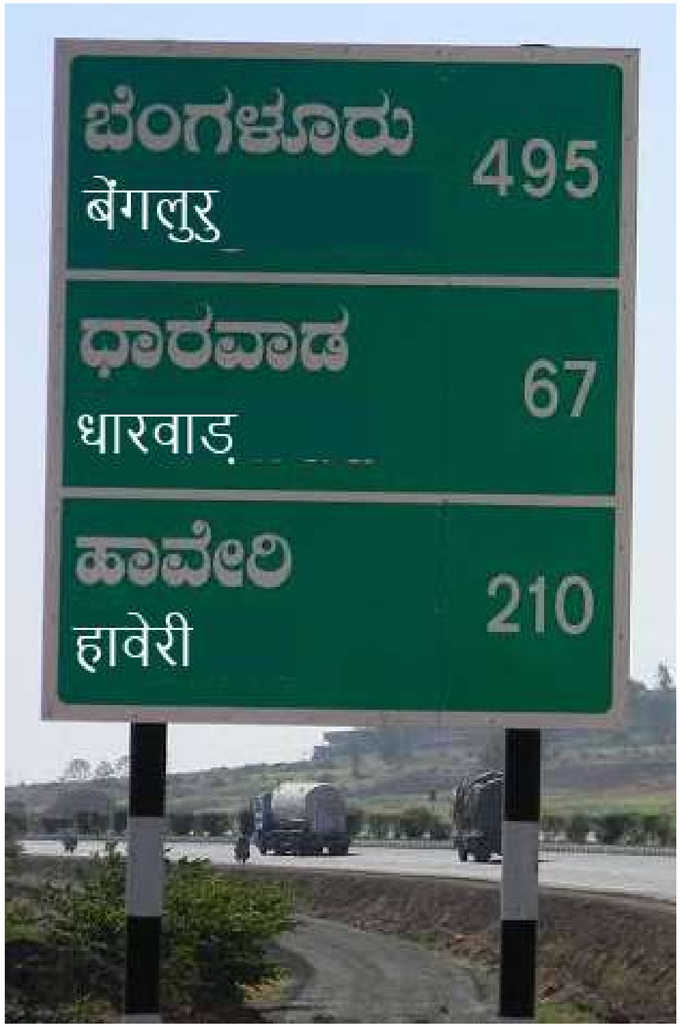
Translation overlay

Wherever reading out is impractical, the screen shows the live feed with translated text

Working examples







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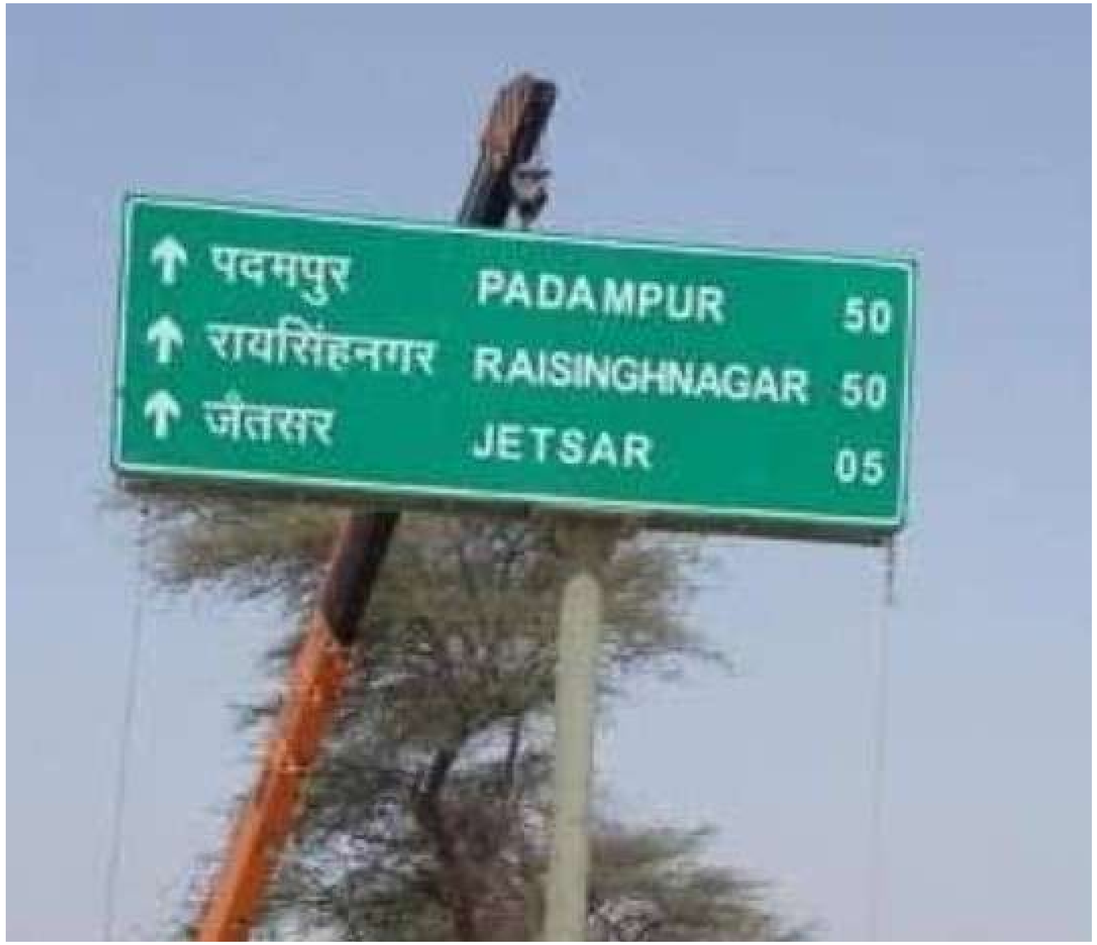
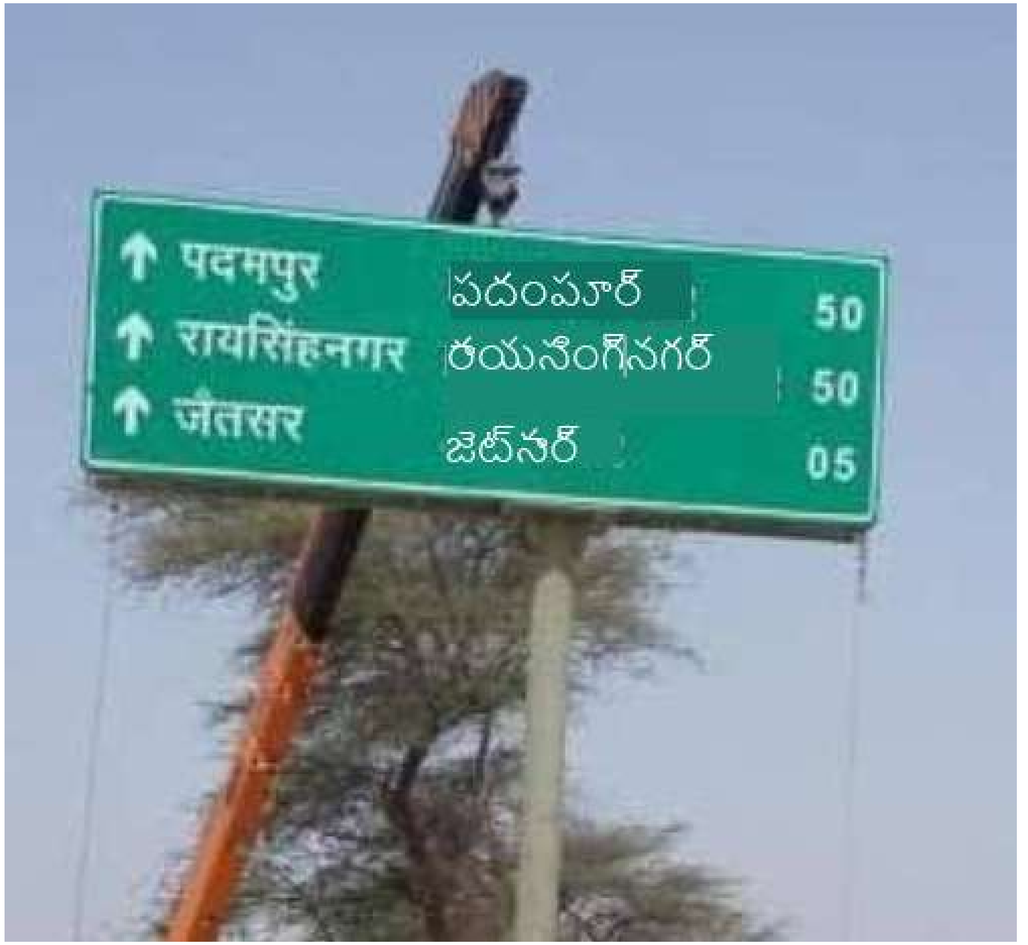
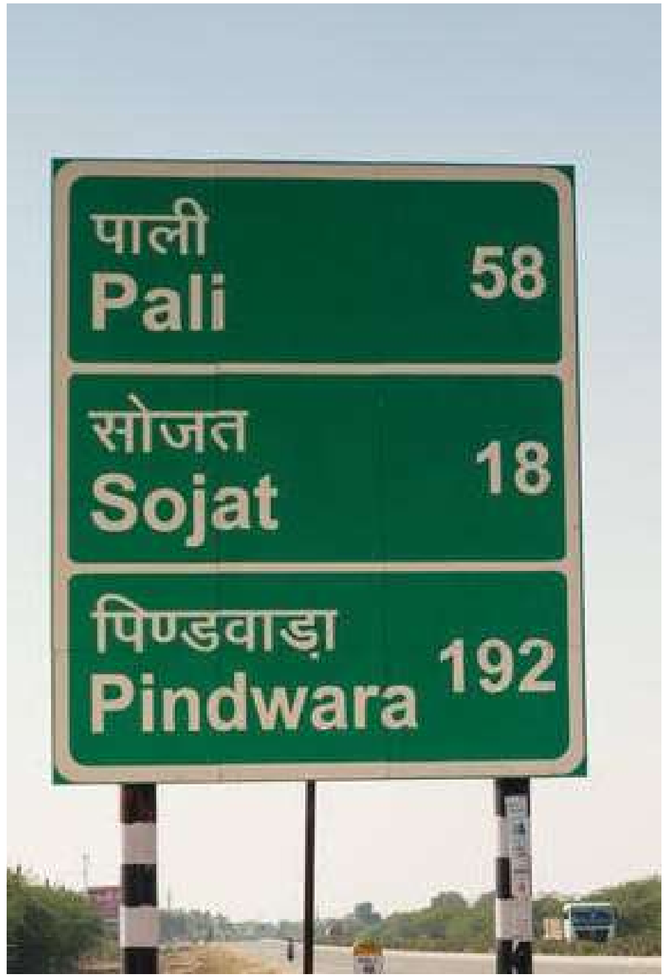
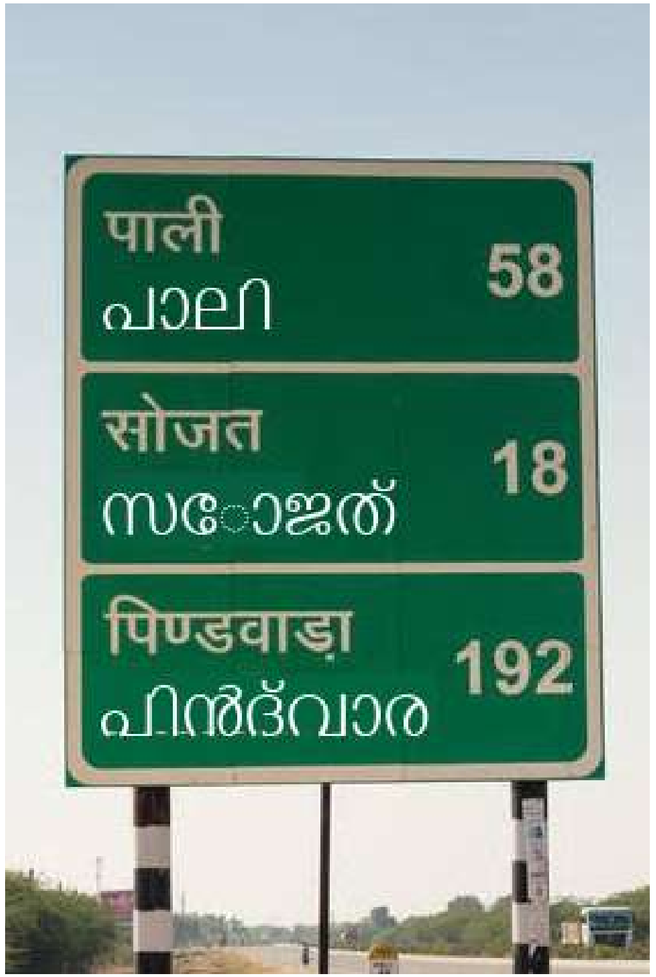
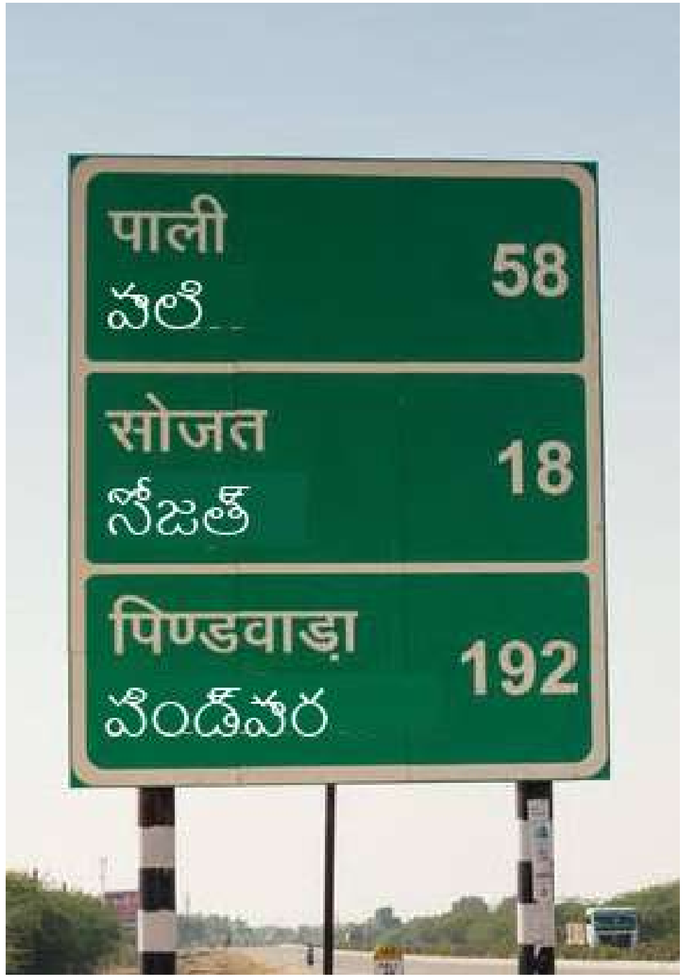




Working examples







Scalability

- Do not need to spend the resources creating **multilingual models** for OCR, MT or TTS
- Using **Google Cloud APIs** for each part of the pipeline (except overlay, which is manually programmed as it does not require locally running a DL model)
- The **accuracy** for Google's pre-trained models is extremely high
- This saves tremendously on **development cost**
- Since the computation is done on the **cloud**, the car's computational prowess is inconsequential
- This allows even older cars to keep performing well for such tasks, ensuring **higher sustainability**

Thank you!
Questions?