Computer Vision for Text Translation

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Introduction

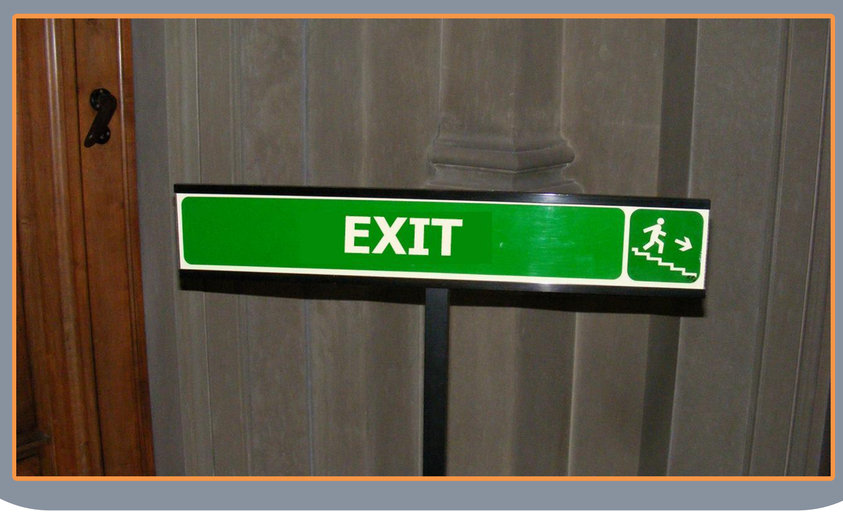
Translation is a service that is required in all places and lives the world over. With the increasing popularity of smartphones we are provided with a platform for unique tools.
A translation camera provides this service in a user friendly manner. Unfortunately current implementations lack many important features and lack language support.
We plan to improve on the current applications by creating our own that has increased support and more features to make the application more useful to more users.
Along with these improvements we also plan to make the app more effective by improving on the major competitors in three metrics:

1. Accuracy
2. Energy Efficiency
3. Data Efficiency

The major competitors:

1. Google Translate
2. Camera Translate
3. OCR Translator

Functionality



Methodology

Once our initial investigation/experimentation of the currently available translation apps is finished we plan on running a 5G cloud simulation on the Greencloud platform. The simulation will be based on parameters provided in an Aug 2015 IEEE transactions journal. We have used a Reliable Energy Efficient and Scalability Model to determine the possible efficiency of a 5G system as proposed by 2020.

$$\prod_{i=0}^{\forall K} RP_{ij} \qquad (1)$$

(1) Reliable Path

$$RP : RP_{min} \sum_{(i,j \in RP)}^{N} -log \frac{1}{RP_{ij}} - RP_{min} \sum_{(i,j \in RP)}^{N} -log^2 -\left(\frac{\theta {\sigma_y}^2}{T_r {d_x}^{-n}}\right) - \sum_{(i,j \in RP)}^{N} \left(-\frac{\theta {\sigma_y}^2}{T_r {d_x}^{-n}}\right) \qquad (4)$$

(4) Bellman-Ford Algorithm and Rayleigh Fading Model

$$\rho^2 = \sum_{k=0}^{n} k\,(\Delta E_m - \Delta E_a)^2 \qquad (5)$$

(5) Network Lifetime

$$\Delta E_a = \sum_{k=0}^{n} k(\Delta E_m) \qquad (6)$$

(6) Average Energy Consumption

$$\Delta E_a = \sum_{k=0}^{n} k \left(\Delta \beta_t \prod_{u \in S(k)}^{n} Y_{uk} + \Delta \gamma_r \prod_{v \in S(k)}^{n} Z_{vk}\right) \qquad (7)$$

(7) Minimal Energy Substitution

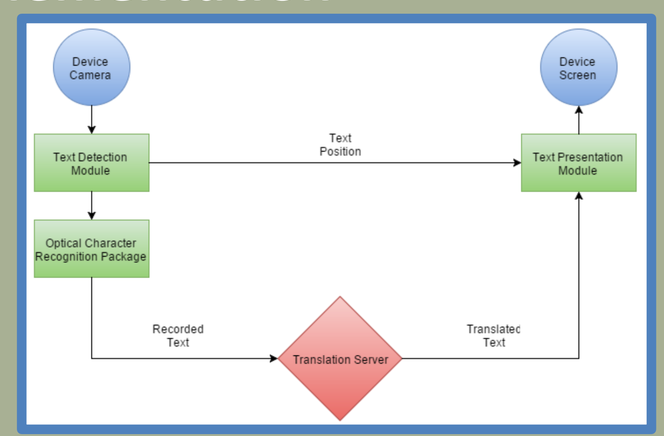
$$\Delta TE_m = \sum_{k=0}^{n} k \left(\Delta \beta_t \prod_{u \in S(k)}^{n} Y_{uk} + \Delta \gamma_r \prod_{v \in S(k)}^{n} Z_{vk}\right) \times \left(\Delta \beta_t \prod_{u \in S(k)}^{n} Y_{uk} - \Delta \gamma_r \prod_{v \in S(k)}^{n} Z_{vk}\right) \qquad (9)$$

(9) Total Consumed Energy

$$S_p{}^{+} = \sum_{k=0}^{\propto} (k_t) + k_j \times \iint_{i=0\ \&\ j=0}^{N+} (\Delta p)^n + (\nabla \mathrm{p}) \qquad (10)$$

(10) Scalable Property (adding)

Implementation



Results