CUSTOMER QUESTION SUGGESTIONS

Orian Sharoni & Nataly Shrits ,Karin Saar, Noa Eyal, Moria Damri,
Talia Segev, Peng Xie, Harish Haresamudram

THE CHALLENGE

At Soluto we have a chat platform for users that need technical support.

The project's aim was to help chat users better express their needs by offering them **intent based** suggestions as they type their question.

Goals:

- Make it easier for customers to get help
- Better experience, for both the customers and experts
- Reduce customers quitting before sending their first message

THE DATA

~100,000 first questions extracted from our data-base

"i'm wanting to upgrade mine and my husband's phones but he has a crack in the corner on his current one; how does all that work with upgrading?"

How can I upgrade my phone?

"my screen was shattered and i have insurance so and wondering how i can have my phone replaced or the screen fixed?"

How do I replace my damaged phone?

"i just copied a note to my clipboard and would like to know how to paste it to my desired place can you help?"

How do I copy and paste?

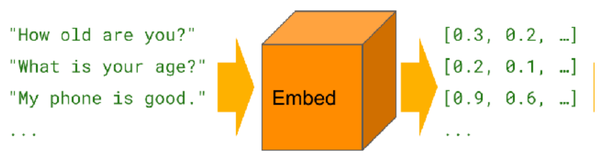
"how in heaven's name can i be able to type again without the nightmare i'm experiencing?"

How do I turn off auto correct?

THE SOLUTION

PREPROCESSING AND TRAIN

1. Preprocess - message must end with a question mark & must not contain salutations like hello, hi etc.
2. Use Tensorflow Universal sentence encoder to create a vector space representation of first messages.



3. Group the first message vectors into K clusters with k-Means clustering to create "families" of common issues.
4. In each cluster, choose the question nearest to the center of the cluster as a representative of the entire cluster.

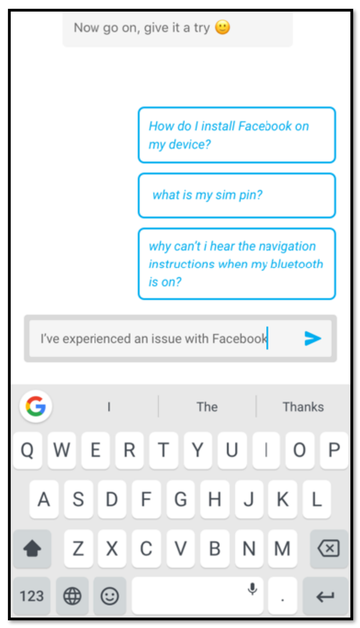
IMPLEMENTATION

Build a micro-service that listens to the text users type in.

1. For each incoming text < 4 words: suggest the 3 most frequently asked questions.
2. For each incoming text ≤ 4 words: calculate the cosine distance from the cluster centers and suggest the nearest 3.

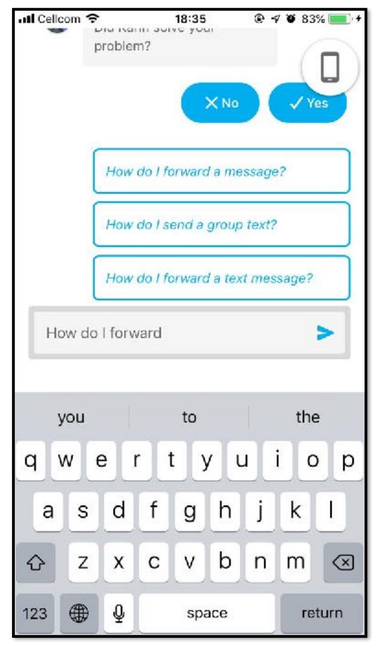
Roll the feature to production gradually using our open-source in house tool for that – Tweek

THE RESULTS



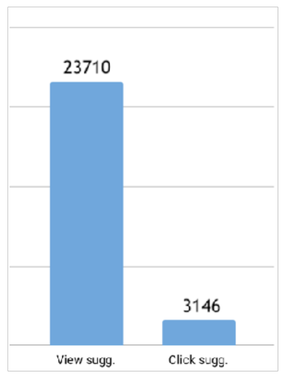
Example A

Example B



13% of the users use the feature

Jan. 2018 feature usage



Clicks distribution