

Census Chatbot Project

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Delivering insight through data for a better Canada



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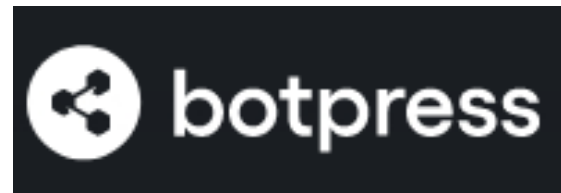
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Motivation

Put into place a robust chatbot solution in time for Census Behavioural Test in 2024 (prep for Census 2026), to provide better service to Canadians and reduce the census agent's workload.

Review of existing open-source frameworks

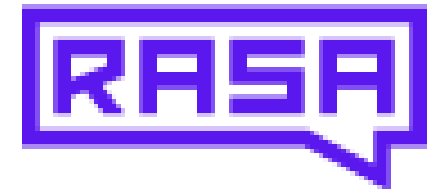
- Reviewed 13 open-source solutions.
- Evaluated them on :
 - Capabilities.
 - Standalone.
 - Performance.
 - Customisability.
 - NLP (Natural Language Processing) performance.
 - Multilingual performance.
 - Security.



DeepPavlov.ai



Botkit



Best solution candidate : Rasa

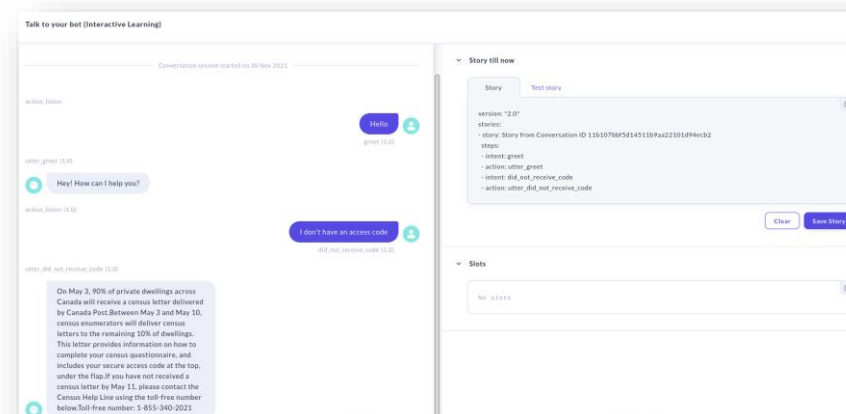
- Leading Open source chatbot solution.
- Developed to be scalable and deployed on the cloud.
- Performant transformer-based model.
- Multi-channel.
- Multilingual.
- Written in Python - Completely customisable.



Rasa : characteristics

- Natural Language Understanding (NLU) data organised into stories and intents.
- Customisable NLU engine for both entity and intent recognition.
- Rasa X backend to monitor the model performance and retrain the model during production.
- Detailed documentation and active open-source community.

```
nlu:  
- intent: greet  
  examples: |  
  - Hey  
  - Hi  
  - hey there [Sara](name)  
  
- intent: faq/language  
  examples: |  
  - What language do you speak?  
  - Do you only handle english?  
  
stories:  
- story: greet and faq  
  steps:  
  - intent: greet  
  - action: utter_greet  
  - intent: faq  
  - action: utter_faq  
  
rules:  
- rule: Greet user  
  steps:  
  - intent: greet  
  - action: utter_greet
```

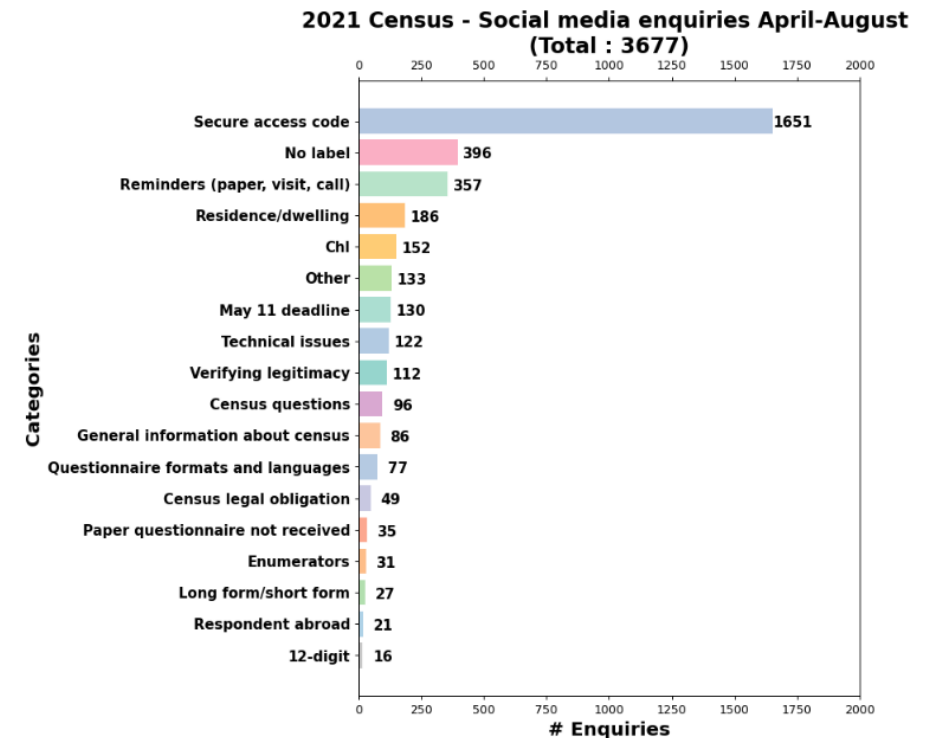


Rasa Demo



Currently : understanding and leveraging past enquires data

- Aggregating the past communications via e-mail, phone and social media.
- Gain better understanding of the nature of enquires.
- Goal is to leverage this data :
 - To reduce the amount of manual work needed for setting up the chatbot.
 - To produce a robust solution that will be ready on day 1.



Thank you. Any questions?

Merci. Avez-vous des questions?

For more information, please contact / Pour de plus amples renseignements, veuillez contacter: alexandre.istrate@statcan.gc.ca

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