Generation of conversations, with semantic variety and volume to curate random dataset for ML model training.

Context:

Data for training language models is not available easily. For many use cases, clients are unable to provide sufficient data for model training. This also requires generating context specific data. Some recent models like GPT-2, Sequential modelling has been used to build sentence completion solutions. Taking inspiration from them, we attempt to solve the issue of data unavailability.

Motivation:

- Cost efficiencies through automation
- Conversations as data points that help in consumer satisfaction
- Data points from such a conversation can help prevent customer churn and improve customer retention
- Telephonic transcripts, post-analysis of bot-based conversations can also be done to improve overall efficiency
- Context-specific data generation ca resolve the dependency on available data set with the client or in public domain

References:

- http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.226.1734&rep=rep1&type=pdf
- https://onlinelibrary.wiley.com/doi/abs/10.1111/ijcs.12021
- https://ai.googleblog.com/2018/05/smart-compose-using-neural-networks-to.html
- https://towardsdatascience.com/fine-tuning-gpt2-for-text-generation-using-pytorch-2ee61a4f1ba7

Data Sample

This Sample conversation is for a specific setting, to take an example use case. The conversation is between a buyer and a seller intending a purchase, and the processing engine can extract information for a given task.

This is a sample for both Problem statement(PS) 1&2. Similar conversions are needed to be generated for problem statement 2 and then can be utilized for training models in PS 1.

Chat Samples: single thread- single product

start
Hi, I am looking for Iphone X charger
Sure, what is the quantity and location
I need 100 pieces delivered to Bangalore
Yes, we have this product
Can you give me a quotation
It will cost 1800
I think price is on higher side, can you make it 1500
Sorry, this price offer does not work out
end
=======END============
=======START============
start
Hey Xyz Electronics Manufacturer, do you supply Iphone X charger
How many pieces are you looking for? and where?
I need 100 pieces delivered to Bangalore
Sure, I can supply.
Can you give me a quotation
It will cost 1800
We will have a deal if the price is 1500
Sorry, your offer not acceptable
end
=======END============

=======START===========

start

Hey Xyz Electronics Manufacturer, do you supply Iphone X charger

Sure, what is the quantity and location

I need 100 pieces delivered to Bangalore

Sure, I can supply.

What is the cost

Our price would be 1800

Great, Lets finalize on this

end

=======END===========

=======START===========

start

Hi, I am looking to buy Iphone X charger

Sure, what is the quantity and location

Can you deliver 100 to Bangalore

Sorry, product is out of stock

end

=======END===========

=======START===========

start

Hi, I am looking to buy Iphone X charger

Sure, what is the quantity and location

I need 100 pieces delivered to Bangalore

Sorry, I don't sell this product anymore

end

=======END===========

=======START===========

start

Hi, I am looking to buy Iphone X charger

How many pieces are you looking for? and where?

I need 100 pieces delivered to Bangalore

Sure, I can supply.

What is the cost

Our price would be 1800

We will have a deal if the price is 1500

Ok, we have a deal

end

=======END===========

=======START===========
start
Hi, I am looking to buy Iphone X charger
Sure, what is the quantity and location
Can you deliver 100 to Bangalore
Sorry, product is out of stock
end
=======END===========
=======START===========
start
Hey Xyz Electronics Manufacturer, do you supply Iphone X charger
Sure, what is the quantity and location
I need 100 pieces delivered to Bangalore
Sorry, I don't sell this product anymore
end
=======END===========
=======START===========
start
Hi, I am looking to buy Iphone X charger
How many pieces are you looking for? and where?
Can you deliver 100 to Bangalore
Sorry, I don't sell this product anymore
end
=======END===========
=======START===========
start
Hi, I am looking for Iphone X charger
How many pieces are you looking for? and where?
I need 100 pieces delivered to Bangalore
Sure, I can supply.
Can you give me a quotation
It will cost 1800
Is that your final price?, I expect some discount
My final price would be 1700
I don't think this price point works for me , thanks for your time
end
=======END===========

=======START===========
start
Hey Xyz Electronics Manufacturer, do you supply Iphone X charger
How many pieces are you looking for? and where?
Can you deliver 100 to Bangalore
Sorry, product is out of stock
end
=======END===========

Chat Sample : multi thread- multi product

=======START===========
Hi I am Looking for Iphone X and its headphone
Okay, How many you need
I would need 100 Iphones and 40 headphones
I want it delivered at koromangla bangaluru
Sure
It will cost you 30k each for iPhones and 1500 for headphones
Headphones are costly.
Give it to me for 1000 each
1200 is the last price i can give you.
Okay , but at-least give me some overall discount
Of you take 30 more headphones i can offer a 10 % off overall
10 is less , at-least give 15
Okay, but only if you order 70
Okay i will order additional headphones.
fine, i will send the package after 10 % advance payment
okay
=======END===========

=======START===========
I want to buy 200 cotton shirts and 5000 white buttons
Okay.
But I only have 150 shirts in stock at the moment.
Okay , will work for now.
What is their cost
150 per shirt and 5 rupees per pair buttons
I will easily get it at 100 per shirt. Can you lower your price.
No.
At max, I can give you some overall discount.

How much
10%
Make it 12
Okay.
What is your location
Marathalli, bengaluru.
Fine. Will send the items.
=======END===========

=======START===========
Hi, do you sell office tables.
Yes, how many are you looking for
100.
I need chairs also
Okay
What is the price
2K for chairs, 3K for tables
I will also need an advance.
Your price is too high
This is my last quote. At max I can give a 5 % overall discount if you buy 150 each.
No that will not work.
I need 100. You tell me your last rate.
I will offer a 3% then, if its okay then fine , otherwise we can't have a deal.
Okay, then let it be
=======END===========

=======START===========
Hi I want tv units and sofa beds
How many do you need
I want 50 tv units and 30 sofa beds
5K for tv units , small and 14000 for sofa bed
I take 30% in advance and rest after delivery
What about discount.
I can give 10 % overall.
Give separate rates, sofa beds are costly.
Okay , will give 12 % on sofa beds
Okay . Send it to indranagar , bengaluru.
=======END===========