

Office of Undergraduate Research and Creative Activity

Chatbot User Experience in Tourism

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Abstract

Generally, you must go to a city visitor center and talk with an actual person to get simple tourist questions about a city, things to do, or happenings answered.

Our project is to create better and more effective chatbots for use in the tourism space. This will allow users to better interact and get information about a particular city and tourist type questions, without having to ask someone in-person at the visitor center. A chatbot is an automatic bot that a person can interact with, ask questions, and get advice from. This bot will be able to answer questions for the user, such as, "Where can I park?" allowing users easy access to this type of information with no trouble. This will better people to get more information about a town or tourist activity without having to physically stop by the visitor center.

We will also be focusing on the quality of this chatbot in an attempt to create a better and easier user experience with correct answers, and answers that make more sense to the reader. The style of speaking used by the chatbot will be much more conversational and user friendly than chat bots usually are.

Overall this will better help to free up visitor center employees from continually answering the same questions. As well as allow tourists to access information about a city in a format that is easy to understand and in language that is coherent and understandable. Tourists will also be able to access this information more remotely and on the fly.

Methods Used

or_R2_13_J_1.txt or_R2_14_J_1.txt

or_R2_20_J_1.txt

or_R2_21_J_3.txt

or_R3_I23_E_3.txt

or_R3_I23_J_2.txt

or_R3_I23_J_3.txt

or_R3_I24_E_3.txt

or_R3_I26_A_1.txt

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Procedure

• A series of question and responses were generated by listening to real questions asked by tourists to tour-guide.

• Slight modifications are made to the tour-guide's answers to make the sentences more credible, appropriate, and have the best user experience. Individuals were then surveyed, both in person and online to determine if the "translated" or original response was better.

Based on this analysis we will train the chat-bot to respond in the most user friendly way to questions asked.

T	NAU NORTHERN AR	IZONA UNIVERSITY
	Read the answers below. Please, select the one the most appropriate for a tourist assistant.	in which the chatbot's language i s
	[Tourist:] Hi, what is the best b	reakfast in Flagstaff?
	[Tourist Assistant Chatbot:] Hello. If you want a So side), go to Martanne's (112 Historic Rte 66). For options, Toasted Owl is good (12 S Mikes Pike S portions, go to Mike & Ronda's The Place (21 S.	outhwest-style breakfast (on the spicy frou-frou breakfast with lots of St). And tradition breakfast with big Milton).
	[Tourist Assistant Chatbot:] Hello. If you want a So side), I guess you should visit Martanne's (112 H good to have a frou-frou breakfast with many op tradition breakfast with big portions, I'd prefer vi S. Milton).	outhwest-style breakfast (on the spicy distoric Rte 66). I think ToastedOwl is otions (12 S Mikes Pike St). And isiting Mike & Ronda's The Place (21
	I don't know	
Fig 1. An ex	xample survey question asking the user to decide w	which response is more appropriate
(AntConc 3.5.8 (Windows) 2019	- 🗆 ×
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C	Concordance Plot File View Cluster	rs/N-Grams Collocates Word List Keyword List
0	or_R2_6_E_2.txt Concordance Hits 357	
0	or_R2_8_E_2.txt	File A
0	or_R2_9_E_2.txt I IS ^Vbz+bez+Vrb++=IS about ^	$in+++=about an ^at+++=ai or_R2_14_J_$
0	2 park ^npl++++=park about ^	$n++++=about one ^cd1++++ or_R3_6_J_1$

gls+xvbnx+=concerned about ^ in+++=about the ^ati++++= or_R3_3_A_:

ally nice ^jj++++=nice about ^ in++++=about the ^ati++++= or_R3_3_A_:

ou ^pp2+pp2+++=you about ^ in++++=about the ^ati++++= or_R3_3_A_3

ngs ^nns++++=things about ^in++++=about the ^ati++++= or_R3_20_E

more ^rbr++++=more about ^ in++++=about the ^ati++++= or_R3_24_A

ar ^vb+vprv+++=hear about ^ in++++=about the ^ati++++= tr_R3_3_A_3

or_R3_I26_A_2.txt	9	more ^rbr+++	+=more a	bout ^ in+++	+=about the	^ati+++=	tr_R3_24	4_A_	
or_R3_I30_A_2.txt	10	ally ^rb+++=	typically a	bout ^ in+++	+=about \$ ^z	zz++++=\$6	or_R3_1	0_E.	
or_R3_I32_A_3.txt	11	-=that lot ^nn+	+++=lot	after ^ in+++	+=after hours	s ^nns++++	or_R3_6	_A_:	
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or_R3_I35_E_2.txt or R3 I36 A 6.txt	13	There ^rn+pl++	++=there	After ^ in+++	+=after Those	e ^dt+dem+	tr_R3_6_	_A_2	
or_R3_I38_E_4.txt	14	n park ^vb+++	long ^ in+++	ong ^ in++++=along Route ^nn+++- or_R3_5					
or_R3_I40_A_1.txt	< >	<		5		>	<	>	~
or_R3_I40_E_3.txt	Search Te	Term 🗹 Words 🗌 Case 🗌 Regex		Jex		w Size			
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Level 1 1R 🚔 🗸 Level 2 2R 🚔 🗸 Level 3 3R 🚔								e Resul	ts

Fig 2. An example of how the sentences are analyzed word by word

Obtaining the Data

To obtain data about which style of language a user would prefer in each category, appropriateness, credibility, and best user experience. We created a survey that would pose a sentence originally said by a tourist assistant and a second sentence that was generated by a computer based off the original sentence. This can be seen in Figure 1 where a sample survey question is given. As can be seen the user has to choose which sentence's language is the most appropriate for the chatbot to be using. This survey was given in two parts, first as a pilot in person where we were able to observe respondents and hear the line of thinking of the survey respondent. This allowed us to make slight tweaks in questions before the full trial in which we used a mass survey distribution tool, Qualtrics, to send out the survey to lots of people allowing us to gather lots of data about the language and registers used when speaking with a

chatbot tourist assistant.

Results and Continuation

Our original pilot survey allowed us to quickly determine any errors in differentiation between questions or items that survey respondents used to determine a difference between the original and computer generated or "translated" sentence.

As we are still developing the chatbot and analyzing the data provided to us in the user studies, the project is on-going. Currently we are analyzing each word of ever sentence to make sure it is marked properly for each part of speech. For example to make sure each adjective is marked as such. An example of this can be seen in Figure 2. After this we will be developing a simply chatbot that will be able to answer user tourist based questions in a format with the best language and sentence structure for users.

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