

Conversation Design Portfolio

Olivia Marrese, PhD

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Generative AI
Conversation Designer



Headshot photo of Olivia Marrese

Designer & AI Engineer

I design and build GenAI bots based on human behavior.

Researcher

Data drives everything I do, from pre sales scoping to proving ROI post-launch.

Linguist

I have a PhD in linguistics with domain expertise in interaction and conversation.

Sample Projects

- Generative AI assistant for a top 10 airline, integrating LLMs and APIs to automate every aspect of the customer journey.
- Refactoring menu-driven and NLU bots as LLM assistants.
- WISMO and FAQ bots for ecommerce.
- Linguistic analysis of knowledgebases for RAG.
- Dialog management system improvements for Watson Assistant at IBM.
- Interaction design for fast food ordering at automated McDonald's drive-throughs.
- Patent disclosure in progress for a predictive model for chatbot displays of emotion.

Overview + Role

As a Generative AI Conversation Designer, I have built dozens of customer service bots that integrate NLU, LLMs, and APIs, in English, Spanish and French.

Methods

- Analysis of transcripts and identification of top call drivers
- Analysis of knowledgebase and necessary content
- Prompt engineering and RAG
- NLU and intent building
- QA and UAT iteration

Selected Cases

Molekule: Rebuilt an NLU and tree-driven bot as a generative AI assistant, resulting in 60% automatic resolution of customer inquiries.

Daily Harvest: Developed an LLM powered classification system for NLU intents and an Apple Messages for Business experience, resulting in 98% positive CSAT scores

Top 5 jewelry retailer: Redesigned and built conversational flow to drive sales, resulting in a 70% increase in sales interactions.

Top 10 Airline: Build a Voice LLM Assistant to modify guest's flight reservations.

Sample Conversation

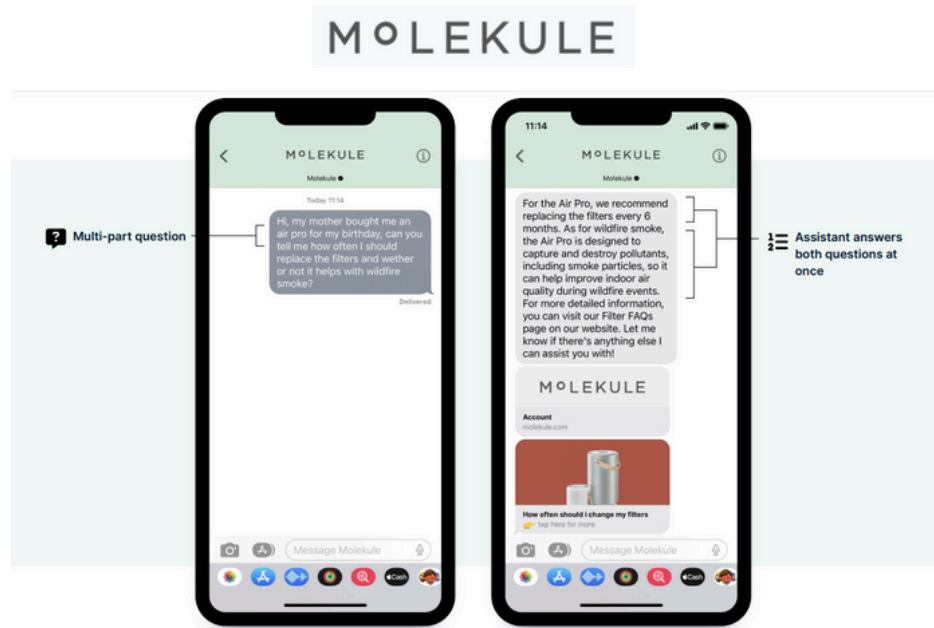
Data show that many customers ask multi-part questions.

Via prompt engineering, I ensured that Molekule's bot could answer all user inquiries in one response.

I also developed a system to hierarchize the knowledgebase to draw on specific content for specific kinds of inquiries.

Impact

In addition to a 60% resolution rate, my work increased positive CSAT scores by 42% from the prior NLU bot.,



Sample of a customer inquiry with Molekule's virtual assistant.

Test it out: molekule.com

Overview + Role

As a UX researcher and designer I conducted a ten week usability study of voice features of Watson Assistant; the first time these features had been tested methodologically.

I used three different prototype bots to target different interactional settings: coffee ordering, a history lesson, and small talk.

Questions

How should the bot respond to misunderstandings?

How should responses vary for voice and text?

How can we design a repeatable system that is applicable to diverse use cases?



IBM Watson Assistant logo.

Methods

- Usability study (10 weeks total, 4 weeks of testing, 18 participants)
 - Surveys
 - Analysis of data collected
 - Prototyping
 - Pattern design for new features
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Key Findings

When a user has an issue with something bot said, it is categorizable as an issue of hearing, speaking, or understanding.

The bot's response to the user should then be designed with respect to the category of the issue, agnostic to the content of the turn.

Impact

My design gets us beyond the repetition of "I didn't get that" from chatbots when there is a misunderstanding.

The bot is able to respond in a more human-like capacity that identifies the specific conversational issue the human is having, as well as provide a uniquely tailored response.

Learning Moments

Working with speech presents unique challenges. Solutions need to not only function within the dialog management system, but also with the speech-to-text system.

Overview

For this project I served as a lead researcher and designer, consulting on best interaction design for automatic ordering technology (AOT) at McDonald's.

I was brought on in a consulting capacity to investigate the challenges of AOT and to design solutions.

Questions

What are the primary challenges that users face when ordering at the drive through?

What design solutions can be implemented to improve order accuracy and efficiency?



Photo of McDonald's drive through.

Methods

- Field study
 - Analysis of order taking practices
 - Prototyping
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Key Findings

Timing is a central challenge; customers want to order quickly, and yet ASR is not instantaneous. Interaction design can help bridge the gap.

Closing is also challenge; we want to offer the customer opportunity to order more items and confirm order choices in a way that maximizes efficiency and accuracy.

Impact

My designs focused on the structure of the interaction: timing, opening, and closing, while maintaining brand identity.

I shared research findings and design solutions with data engineers, machine learning experts, and project managers.

Learning Moments

There's no substitute for live testing. In addition to user data, I tested features on the AOT drive-through system myself.



My Process



Start with the data

What's the businesses biggest pain points? Who are their users? What kinds of conversations do they have? What's the ideal customer journey?

Identify needs

What are our users going to do with this product, and how can we best help them accomplish their goals? What does my team need to be successful as we work?

Scope project

What's our timeline for deliverables? Who are the stakeholders, and how will we communicate our findings and design choices?

Ideate and collaborate

The sky is the limit. I'm always looking for new ideas to try and new people to learn from.

What to Expect



Giving a presentation at IBM's AI Systems and Solutions 2022 offsite.

Inquisitive

I believe learning never ends, and there's always something new to discover.

Imaginative

I make space for imagination and creativity in my designs.

Impactful

I deliver concrete, scalable solutions and continue to iterate at each step.

Connect



Defending my dissertation remotely!

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