

PORTFOLIO | jon ross – conversation design engineer

Tools: VoiceFlow . Adobe XD + Cloud . Alexa Developer Console . AWS . Bootstrap
ChatGPT . Google Bard

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January 2024

CONVERSATION DESIGN PROJECTS

Prompt Design

- *Using Google Bard AI to build a team of tutors*

VoiceFlow Prototypes

- *jonrossDESIGN* – with FAQ-style website guide chatbot

Adobe XD Prototypes

- *Top Priority* - task scheduling speech-playback prototype
- *Personal Trash Diary* – waste disposal awareness voice prototype

Alexa Skills

- *Alexa Developer Console*
 - *Alexa Flashcard Skills* – question-answer pairs about conversation design and prompt engineering
 - *Starship Space Facts Skill* – randomized retrieval of space science facts

UX DESIGN PROJECTS

Dashboard Design

- Independence Blue Cross

Login Screen Design

- IQvia / Wingspan Technologies

CONVERSATION DESIGN PROJECTS

Prompt Design

Generative Ai as an Instructor

I used **Google Bard** to create a team of AI-powered tutors for topics related to prompt engineering and conversational AI design.

There are currently (14) Bard AI tutors:

- Tutor for Conversation Design Institute
- Future-Back Thinking
- Breakthrough Thinking
- AI-Powered Vision Boards
- Transformational Personal Coaching
- [VoiceFlow Documentation](#)
- Prompt Engineering
- Conversational Copywriting
- Conversational UX
- Supervised (Machine) Learning
- Natural Language Processing
- AI Training
- [Conversational AI Design](#)
- Prompt Chaining in VoiceFlow

The screenshot shows the Google Bard chat interface. On the left is a sidebar with a 'Pinned' list of 14 topics, including 'Introduction to Conversational AI Copywriting' which is highlighted. The main chat area contains a user prompt asking for a step-by-step lesson on conversational AI design. Below this, the AI response is titled 'Conversational AI Design Lesson 1: What is Conversational AI Design?'. The response includes a definition of conversational AI design, an example of a chatbot ordering food, a practical application for customer service, and an optional quiz section. At the bottom, there is a text input field with the placeholder 'Enter a prompt here' and a microphone icon.

Based on prompt created by [Dave Birss](#)

AI Tutor for **Conversational AI Design** | Link to this prompt and response: <https://g.co/bard/share/61a7f7cdf311>

VoiceFlow Prototype - jonrossDESIGN

FAQ-style Chatbot Use Case

The client is a consultant / entrepreneur conversation designer and prompt engineer.

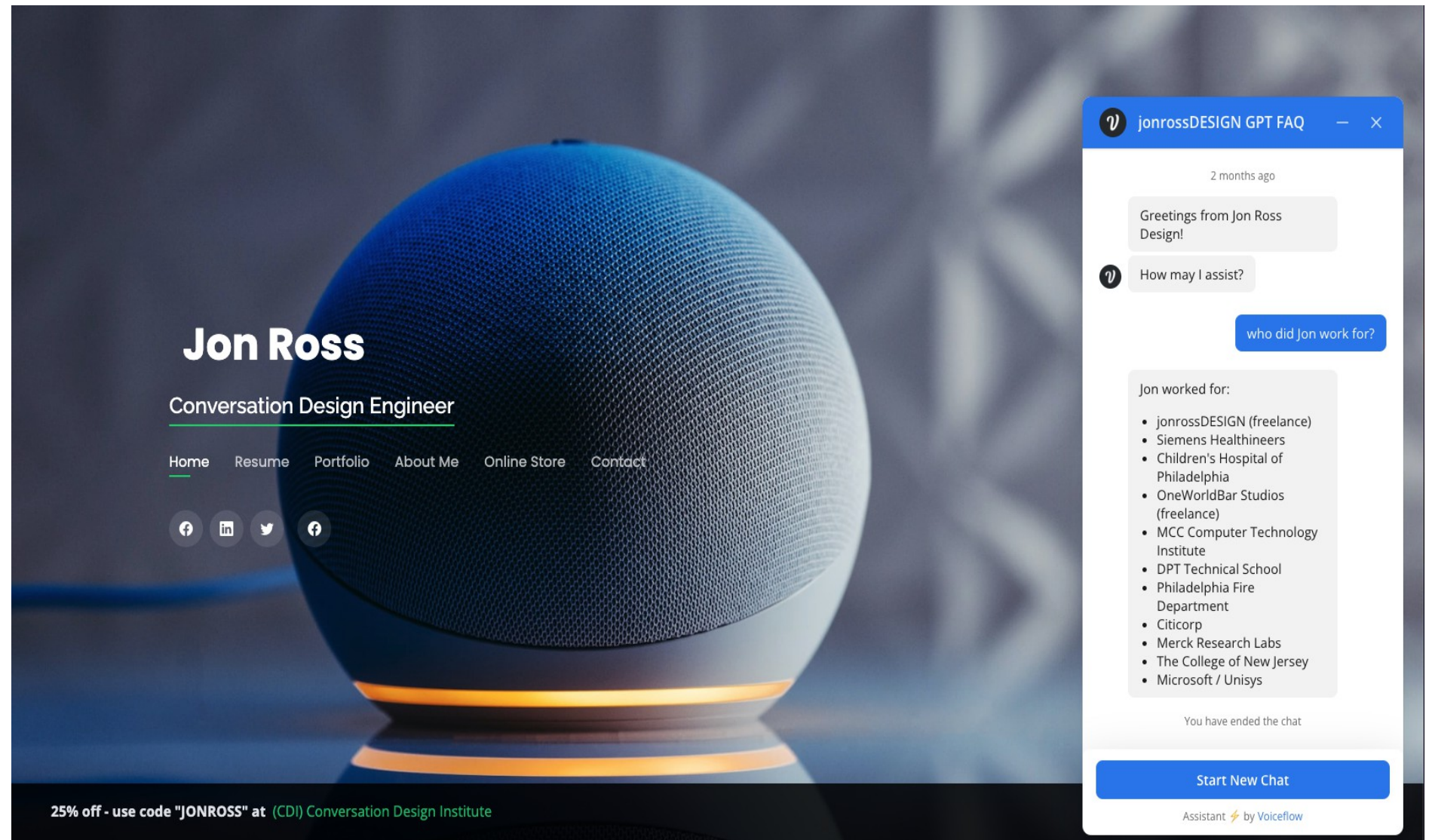
He needs to have an interactive website where visitors can pose questions to a **FAQ-style chatbot** or **voice assistant** as well as click links to visit the various pages available on the site.

This website chatbot will offer to summarize the client's technical skills, abilities and hear about the services he offers.

The use case for this chatbot is to serve as a resume assistant and website guide.

This prototyping system has a limited number of AI transaction tokens. The production NLU model of this prototype will be exported into **Amazon Lex**, a fully-managed AWS service. It uses the same conversational engine as Alexa but supports text and voice interfaces.

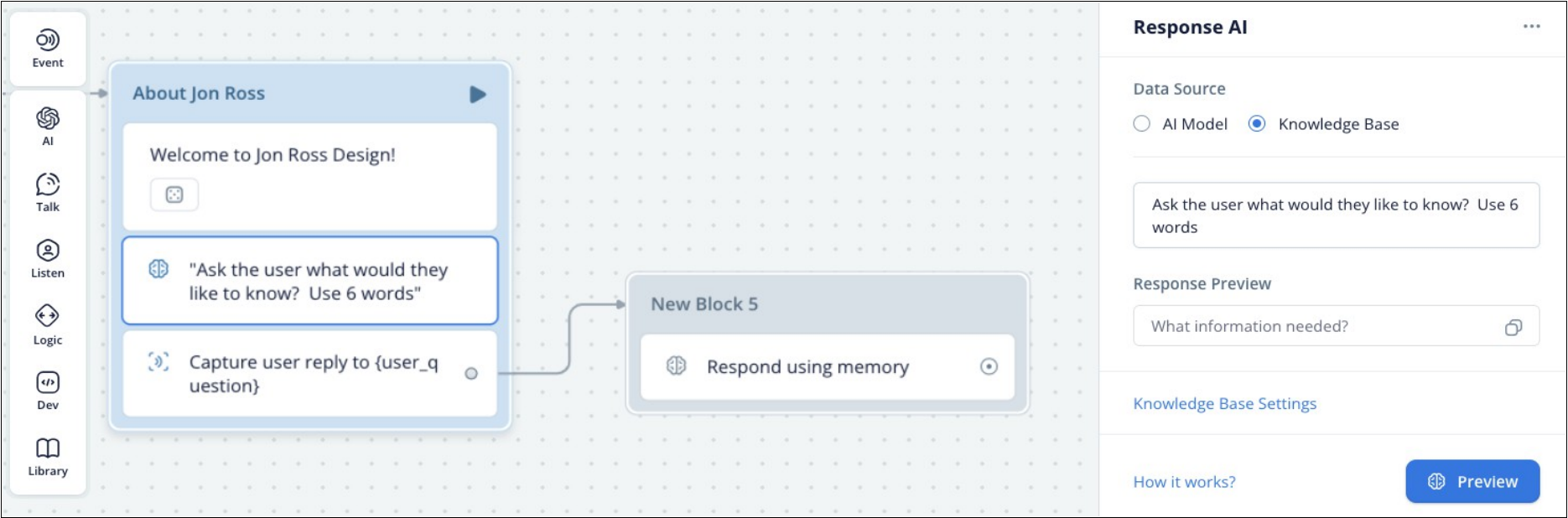
This video describes the process:
- [Voiceflow NLU Export: Lex V1](#)



[Link to Chatbot Site](#)

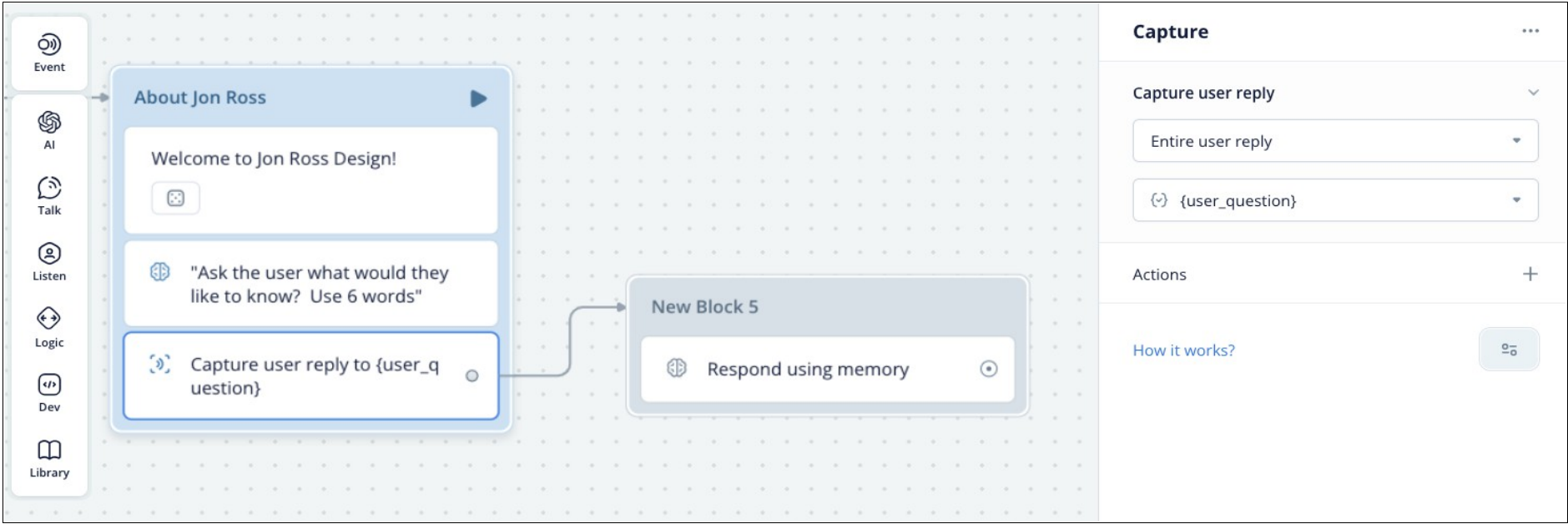
VoiceFlow Prototype

First the chatbot greets the user when its opened. Then a function is triggered to have the built-in **GPT** generate a prompt fo the user (ex: ***How can I help you?***). The bot then “**captures**” a user response or **utterance** which is then used as a variable to query the knowledge base. A chatbot-specific **knowledge base** was created by uploading a resume and URLs to a LinkedIn profile and web site creating a vector database which is accessed by the GPT-powered Voiceflow **Response-AI** step (highlighted).



The user utterance, {user_question} or {last_utterance} is matched to an **Intent** in the chatbot's language model. An Intent is short for “Intention, or purpose of the user's choosing in the conversational flow”.

An Intent is an action that the user wants to perform. In this use case, to find and summarize information about the client. “Respond using memory” means using the {user_question} variable to respond.

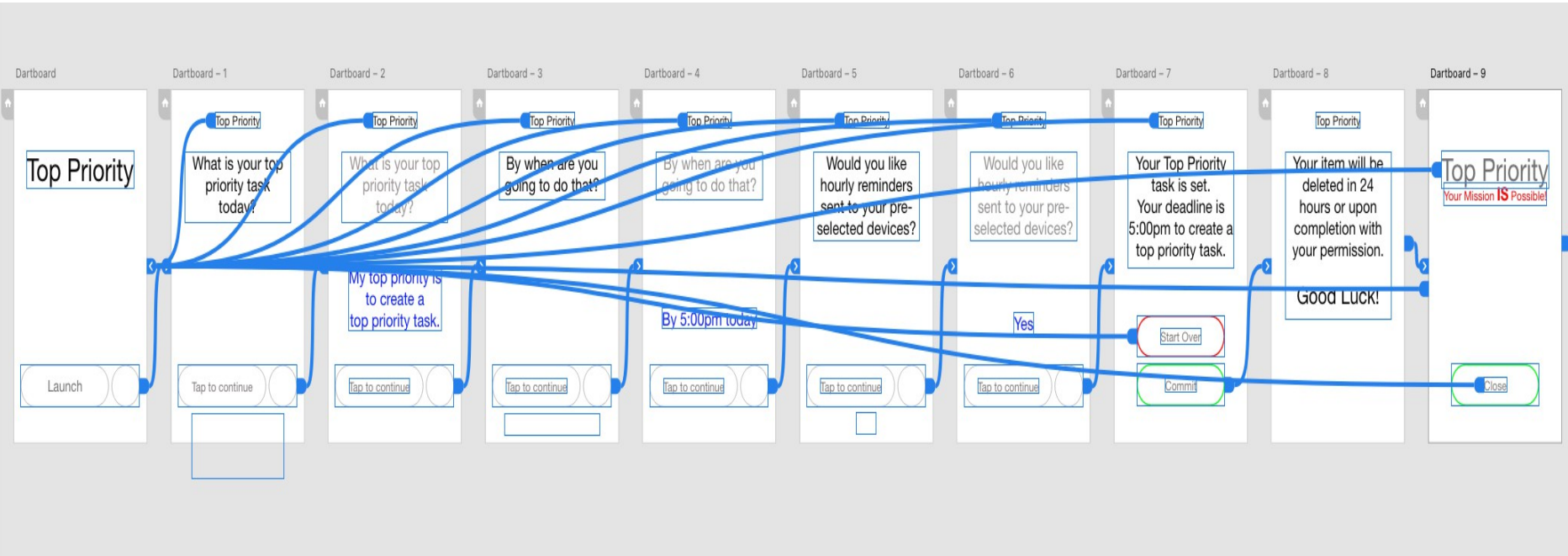


Adobe XD Prototype

"Top Priority" Productivity Assistant



[Link to Adobe XD prototype:](#)



DESIGN PROCESS

The Challenge: to create a visual step-by-step experience to test the user flow for a non-visual voice application that will run on a smart speaker.

The Solution: a bare-bones wireframe with speech playback functionality in Adobe XD.

Next Steps: build the Alexa Skill (voice app) in the Alexa Developer Console and/or the VoiceFlow tools for publishing in the Amazon Alexa Skill Store.

this requires signing into an Adobe account to experience the embedded audio. It works best on mobile browsers (known bug).

Adobe XD Prototype | **MyTrashDiary Waste Reduction Voice Assistant**

Overview

This project is based on a theory about unconscious behavior that most people display when they discard an item.

I'll call it “**The Bottomless-Hole-in-the-Ground Syndrome**”.

It's an ancient brain pattern and cognitive blind spot that continues to operate in the subconscious of most people.

The theory goes like this: humans have been throwing things away into a metaphorical hole in the ground since - who knows when! Actually those holes in the ground are physical and psychological as well.

Approach

The Problem Defined

- Human cognitive blind spots about trash have caused significant damage in our closed planetary ecosystem

Empathizing with Customers

- Externalizing mindfulness and supporting the recycling-intentions of social influencers

Prototyping and Ideation

- Emphasizing future-oriented technology-based solutions

Deliverables

- Design for a cloud-based support service as an opt-in personal waste reduction coach.

The Challenge

TO GENERATE AN ORIGINAL SOLUTION

What-if in the future, a conversational artificial intelligence were available to support and coach those of us interested in reducing the amount of our waste?

Would anyone talk to it?

The Technology Used

All Amazon Echo devices, mobile apps and Internet-of-Things device with access to the Alexa A.I. service.

My Role

Role: UX researcher and UX/UI designer

Timeframe: (1) academic year

Platform: MacOS

Tools: Adobe XD, Fireworks and Photoshop, Amazon Alexa Skill Development tools

Results

A solution was developed based on users having personalized conversations with an Amazon cloud-based **A.I. as-a-Service** to support their efforts to create new disposal habits. Interactions could occur throughout the users day, at home through stationary Alexa devices and away from home using mobile devices and Alexa-connected wearables. Users would request reports from Alexa summarizing their trash disposal patterns, possibly requesting preemptive notifications to support new habits.

STATUS: Project is still In Progress

Waste Reduction Assistant | MyTrashDiary is a location-aware voice-first app for users interested in tracking and reducing their personal waste

MyTrashDiary is an Amazon Alexa Voice App for tracking items being discarded by the user. This voice interface and it's companion screen version synchronize with Internet-of-Things (IoT) devices in the home of the user for tracking waste disposal events.

This project was for an assignment for the PENN XSD Design Program. [\(link\)](#)

A visualization of the extent of the plastic bottle pollution problem:

<https://graphics.reuters.com/ENVIRONMENT-PLASTIC/0100B275155/index.html>



He told Alexa that he just threw away an empty water bottle. He's tracking what he throws away with a voice app.

Interaction Model

This shows how the Echo Loop is worn, spoken and listened to by the user. [\(link to demo and review\)](#)

[\(Amazon Echo Loop page\)](#)



INTERACTION DESIGN



Waste Reduction Assistant | MyTrashDiary is a location-aware voice-first app for users interested in tracking and reducing their personal waste

User Journey

The **MyTrashDiary** is able to capture trash and recycling events from user input or by trash disposal receptacle detection and other Internet-of-Things devices in the home. The journey illustrated takes place when the user is away from home.







Design Goals

- To create a frictionless conversation-like user experience for someone interested in quantify -ing their waste generation and reducing the amount they throw away.
- To increase user awareness of their waste disposal events and locations specifically disposing of plastic bottles.

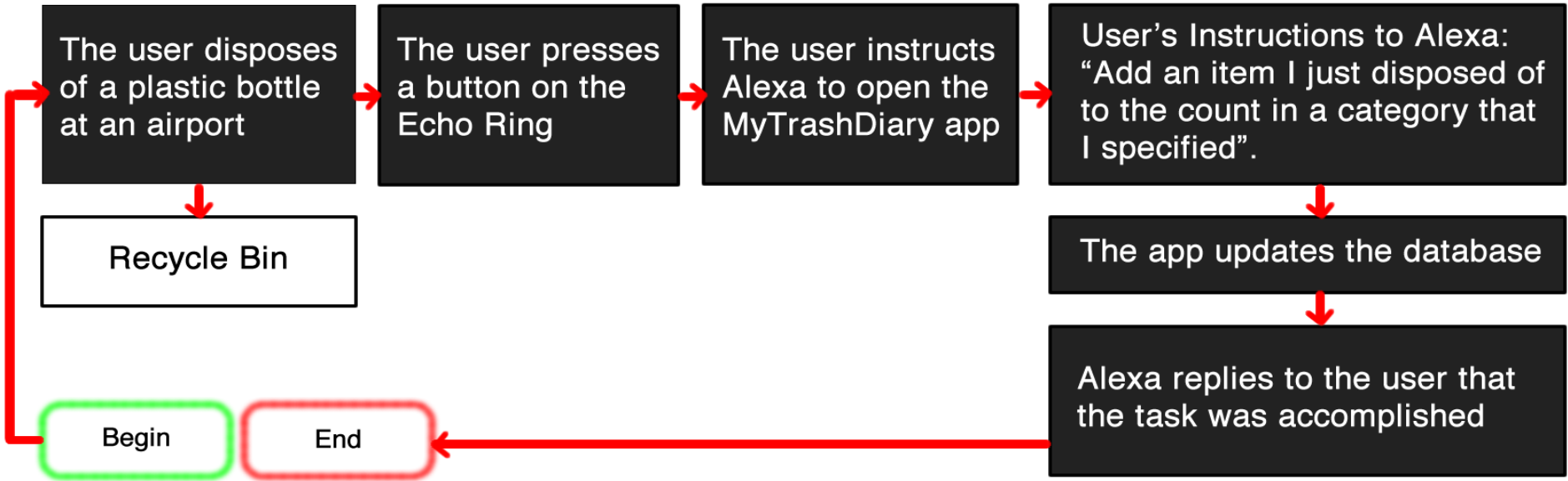
Link to user research survey:
- [Plastic Bottles: Trashed or Recycled?](#)

Customer Journey Map

The User's Experience:**Person feeling thirsty before boarding a departing flight at an airport** (* location logged)

| | | | | | | |
|---------------------------|--|--|--|--|--|---|
| What happens? > | Buying bottled water after check-in screening | Drinking water in a hurry before boarding | Throwing bottle away in nearest recycle bin before running to gate | The user informs Alexa of the disposal event using Echo Loop * | Alexa acknowledges and adds to disposal count database * | Throwing bottle away in nearest recycle bin before running to gate |
| Who is involved? > | -- | -- | -- | -- | -- | -- |
| Emotions > |  Disappointed |  Relieved |  Disappointed |  Positive |  Grateful |  Happy |
| Why? > | Prefers reusable bottles but forgot | Quenched thirst | Doubts recycling actually happens | Fulfilling a purpose | Helped by Alexa | Mission Accomplished |

User Flow



Waste Reduction Assistant | MyTrashDiary is a location-aware voice-first app for users interested in tracking and reducing their personal waste

An Adobe XD prototype

A waste reduction coach is an entity that a user allows to track and monitor their behavior in order to suggest corrective actions to achieve the user's intended goals.

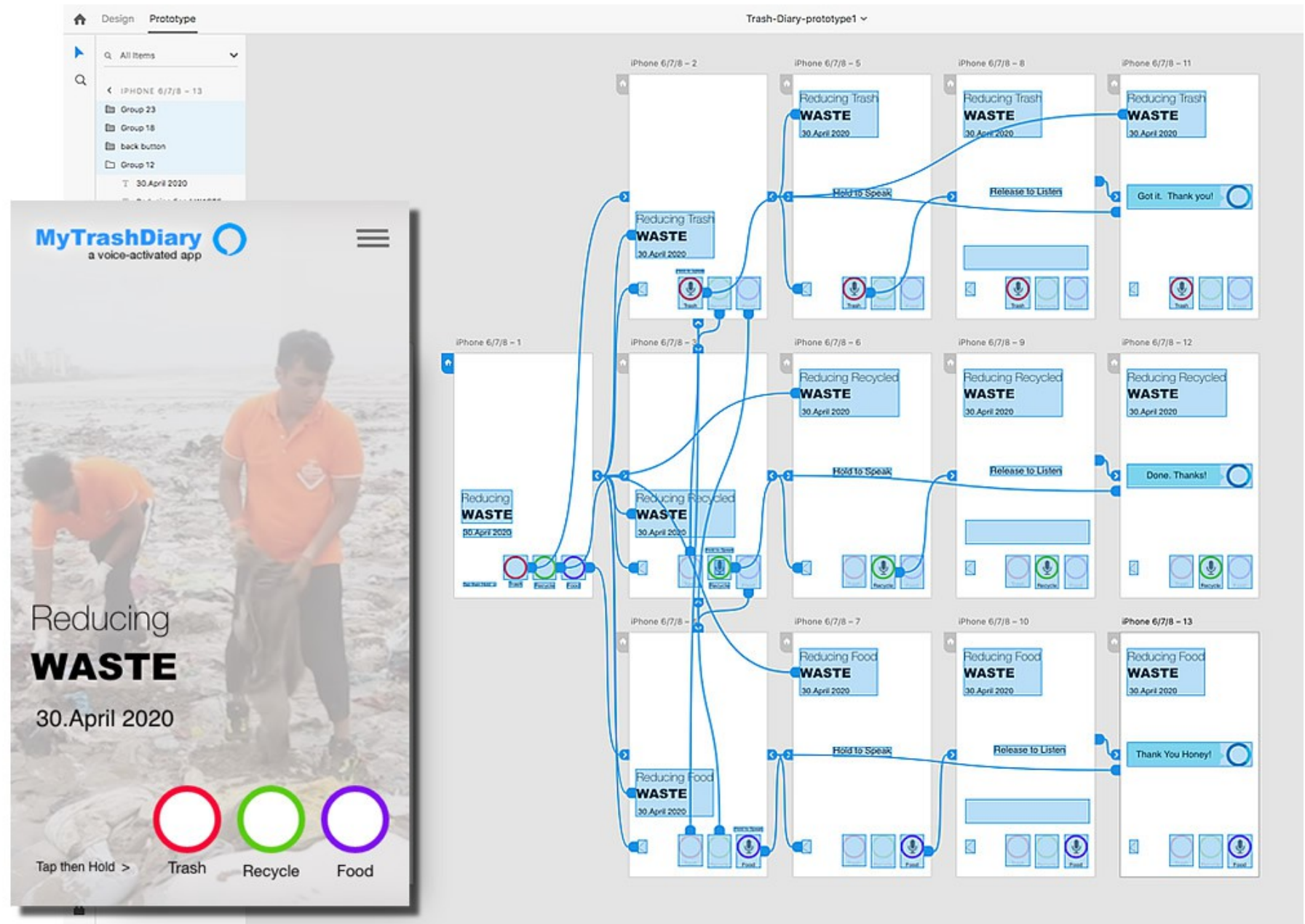
This mobile app prototype will illustrate visually what the voice app does with speech when users report their waste disposal events. Users can also request summaries regarding disposal events over various periods of time: weeks, months, etc. The mobile app will also display graphs and charts on a dashboard page.

STATUS:

The Alexa-enabled Adobe XD prototype is in development.

This project is still In progress...

- [link to mobile prototype](#)



Alexa Skill Development |

What is an Alexa Skill?

“The *Alexa Skills Kit (ASK)* is a software development framework that enables developers to create content, for Alexa called **skills**.” - [Amazon](#)

Alexa Skills:

Conversation Design Flashcards ([link](#))

- Based on “*term:definition pairs*” generated by Google Bard and ChatGPT, related to **conversation design**.

Prompt Engineering Flashcards ([link](#))

- Based on “*term:definition pairs*” generated by Google Bard and ChatGPT, related to **prompt engineering**.








MyTrashDiary ([project in development](#))

- an event recorder / behavior change coach style of interaction for users to track and record their trash disposal of waste indicating waste type, time and geolocation

Starship Space Facts ([link](#))

- this skill responds to users requests for random facts and descriptions of space phenomena as-if from aboard a speeding starship

Voice applications built for Alexa Smart Speakers / Developer Console Screenshot

| SKILL NAME | LANGUAGE | MODIFIED | STATUS | ACTIONS |
|--|----------------|------------|--|--|
|  Prompt Engineering Flashcards Copy Skill ID | English (US) | 2023-07-13 | | Go to Blueprints console |
|  Conversation Design Flashcards Copy Skill ID | English (US) | 2023-06-16 | | Go to Blueprints console |
|  Conversation Design Store Custom • Copy Skill ID | English (US) | 2022-12-29 | ● In Dev | <div>Choose action ▼</div> |
|  My Top Priority Custom • Copy Skill ID | English (US) | 2022-11-08 | ● In Dev | <div>Choose action ▼</div> |
|  My Trash Diary Custom • Copy Skill ID | English (US) | 2020-01-05 | ● In Dev | <div>Choose action ▼</div> |
|  Starship Space Facts Custom • Copy Skill ID | English (IN)+4 | 2018-03-15 | ● Live Go to Alexa Skill Store  | <div>Choose action ▼</div> |

From Prototypes to Conversational AI

Conversation Design Workflow

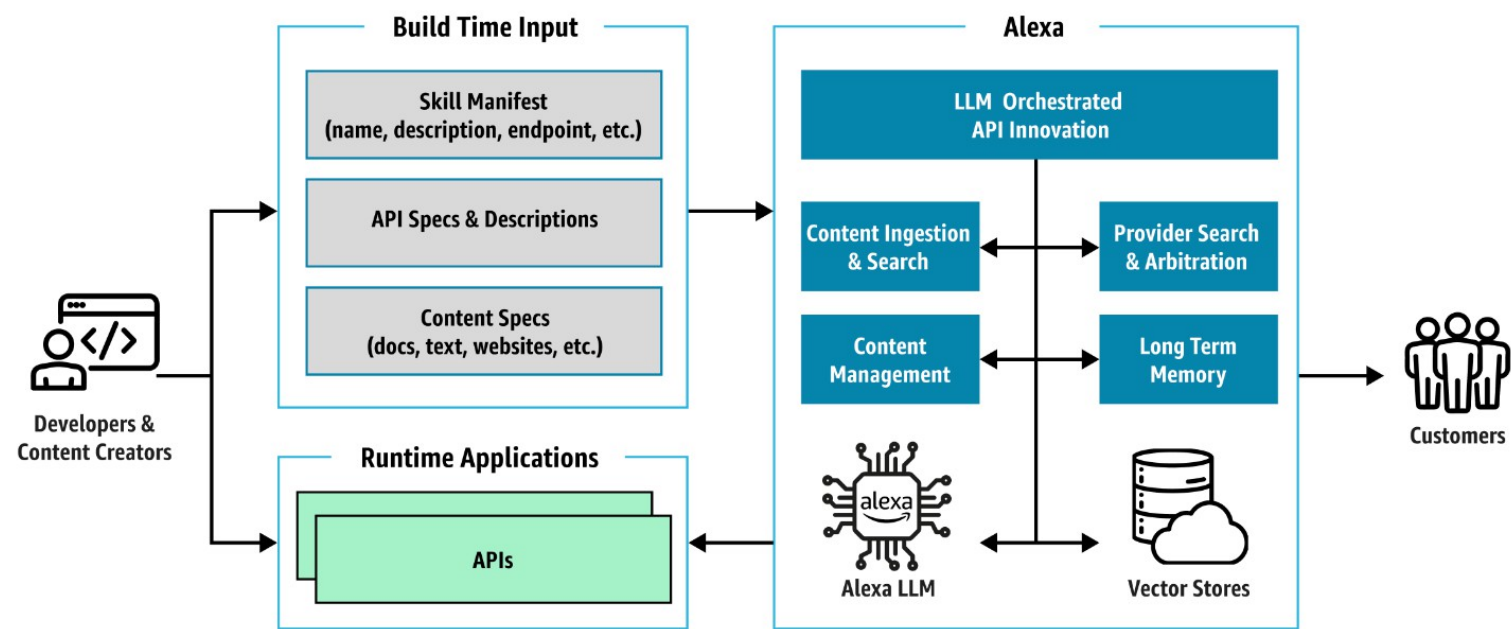
Prototyping > Development > GPT Processing > Hosting and Deployment

I'm interested in the conversation design process: from **sketch-to-prototype-to-voice app**. I believe that i'm creating a great workflow as a result of my recent experiences and research which includes prompt engineering.

The future of Alexa is one that's powered by a large language model (LLM) specifically optimized for voice interactions. Creating an Alexa skill with the integration of powerful AI's like GPT-4, the possibilities are endless for conversation design.

The **Alexa-based voice assistants** I've designed will eventually be deployed to **Amazon Web Services (AWS)**, the fastest growing voice interface platforms developed so far, whose A.I. compute capabilities are growing exponentially.

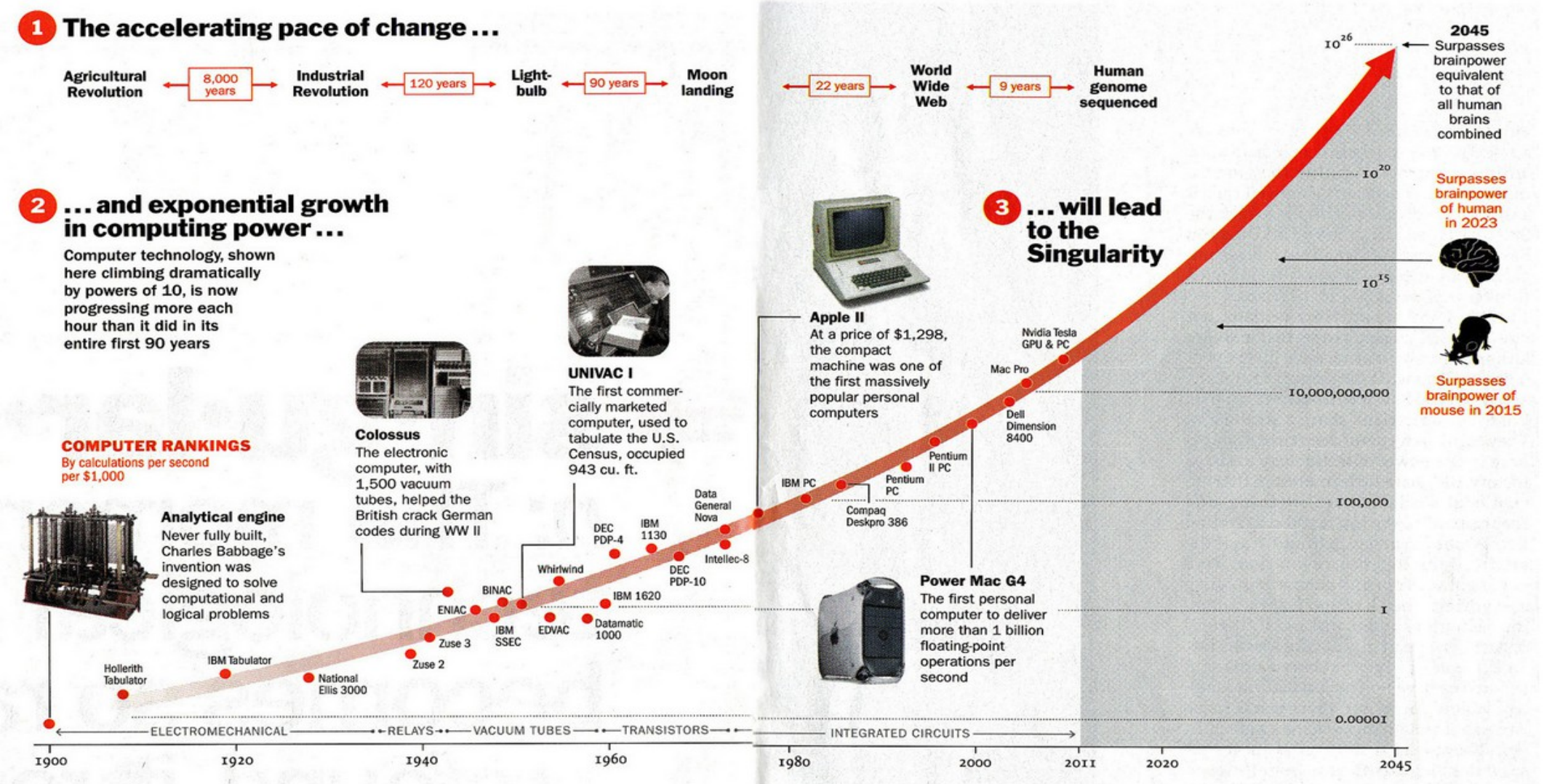
I am developing a **Google Gemini-based chatbot** for use by students in an online course I'm developing that utilizes the workspace-integrated **Google Bard** AI system. It will be hosted on the **Google Cloud Platform (GCP)**.



Building with Alexa's LLM: Conceptual Architecture

Conversational AI will tap into the *Exponential Growth of Computing Power* currently underway to support and serve users over their entire lifetimes.

The Law of Accelerating Returns is an evolutionary process – this means that a) the rate of technological innovation is exponential. and b) that as technological progress is made throughout shorter and shorter timespans,



UX DESIGN PROJECTS

Independence Blue Cross

Data visualization prototype for internal desktop-only access at IBX Headquarters in Philadelphia ([video](#))

OVERVIEW

"The **Executive Dashboard** project provides IBX with a new way to look at the performance of our project portfolios."

The Design Process

- gather requirements from users
- create hand drawn sketches on paper web page templates
- make isometric drawings that include layers and slide-in or dropdown menus
- build clickable pdf mockups
- use the Bootstrap framework for layout and develop site architecture
- use JavaScript libraries for graphic display from JSON file data libraries
- populate the layout with JS graphic components linked to JSON libraries

Role: UX designer / UI developer

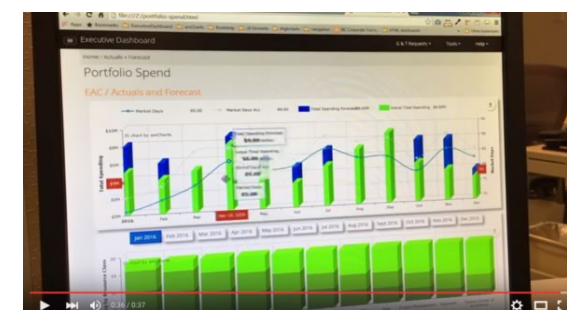
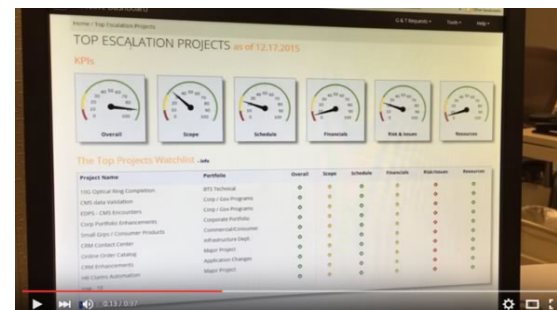
Timeframe: 8-months

Platform: Windows 10

Tools:

Balsamiq Mockups, Sublime Text,
Bootstrap, JavaScript libraries:

[D3.js](#) and [amCharts.com](#).



Independence Blue Cross
IBX / IBC Executive Dashboard

Documentation describing the project was created for the development team to complete the implementation phase.

STATUS: Project was completed

Link to the **documentation**
- [link to project documentation](#)



The Executive Dashboard

The **Executive Dashboard** provides IBC with a new way to look at the performance of our project portfolios. These report dashboards are anchored on the goal to provide quick, relevant, and easily understood information. Geared toward executives, these reports allow users to find meaningful updates and insight without spending significant time mining through volumes of data. The drill-down interactivity allows users to see portfolio performance at a highest level, mid-level, and detailed level views, all of which are integrated to "zoom" in and out of areas relevant for your user experience.

OVERVIEW

The objective was to create a common look-and-feel for several previously developed web applications as well as a single sign-on screen for users of multiple applications.

Mockups and prototypes were created using Adobe XD, Premiere Pro and Photoshop as well as HTML5 / CSS3 and JavaScript. Digital assets for the application codebase were created using Figma, Sketch and InVision Studio.

DESIGN CHALLENGE

To develop interactive prototypes and working code for interfaces that would create a consistent experience across multiple web applications.

Role: UX / UI designer

Timeframe: 1-year

Platform: MacOS

Tools: Adobe XD, Sketch, Figma, InVision, and Intelli-J IDE

STATUS: Project Completed



COURSES TAKEN (2023)

Courses Taken

Or in-progress in 2023

[Designing AI Assistants](#)

[Conversation Design](#)

[AI Trainer](#)

[Conversational Copywriting](#)

[CxD Expert Classes](#)

[CDI – Festivals](#)

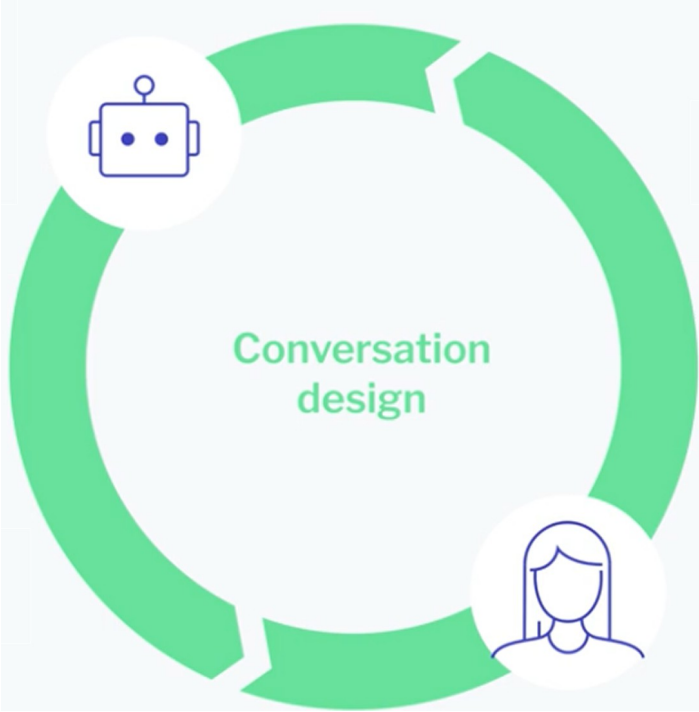
[Designing with Voiceflow](#)

Conversation Design Institute

[Gen-AI Assistant Builder](#)

[Prompt Chaining](#)

Voiceflow



Natural Language (NL)

< NL-Creation | NL-Understanding >

Conversation Design | Prompt Engineering

AI-to-Human | Human-to-AI

Conversation Design Engineering

Coursera | [Prompt Engineering for ChatGPT](#)

EdX | [Intro to ChatGPT](#)
[Prompt Engineering and Adv. GPT](#)

LinkedIn Learning | [UX for Voice](#)

[Intro to Conversation AI](#)

[Prompt Engineering: Talk to AI](#)

[GPT-4: New GPT Release](#)

[Intro to Prompt Engineering](#)

[Next Generation AI](#)

[Research and Write with AI](#)

[Generative AI for Business Leaders](#)

[Becoming an AI-First Leader](#)

[What is Generative AI?](#)

Udemy | [Prompt Engineering Practice Tests](#)

[Link to Certificates](#)

jon ross – conversation design engineer

Tools: [VoiceFlow](#) . [Adobe XD + Cloud](#) . [Alexa Developer Console](#) . [AWS](#) . [Bootstrap](#)

[ChatGPT](#) . [Google Bard](#)

(coming soon) [Relume.AI](#) . [Figma](#) . [WebFlow](#) . [Amazon Lex](#)

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