



**BITS Pilani**  
Pilani Campus

# Design of Conversational Experiences

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CSIS, BITS-Pilani



**Course Name - Design of Conversational Experiences**

**Course Number - SE ZG530**

**Units - 4**

# Acknowledgement

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Slides Contributed by:  
Dr. Shreyas Rao  
CSIS, BITS-Pilani

# Instructor Profile



## Dr. Bharathi R

Dr. Bharathi R is an accomplished academician and researcher with over 27 years of professional experience spanning teaching, research, and administration. She served as a Professor in the Department of Computer Science and Engineering at PES University, Bangalore, for 10 years, where she also headed the Center for Data Modelling, Analytics, and Visualization (CoDMAV).

Prof. Bharathi specializes in Machine Learning, Deep Learning, Natural Language Processing, Data Science, Data Analytics and Computer Vision, with 11 years of active research contributing to numerous Scopus-indexed publications. Her diverse professional journey includes roles as a Research supervisor, Doctoral Committee member, SAP-ABAP and CRM consultant, and mentor for various academic and industry-aligned projects. A visionary educator, she excels in curriculum development, digital content creation, and fostering interdisciplinary collaborations that bridge academic research with industry needs, driving impactful technological advancements.

# Instructor Profile



## Courses I teach,

- Design of Conversational Experiences
- Natural Language Processing
- Natural Language Processing-Applications
- Machine Learning
- Deep Learning
- Computer Vision
- Mathematics for Data Science
- Data Analytics
- Object Oriented Programming and Design
- Design and Analysis of Algorithms
- Data Structures
- Theory of Computation

# Student Introduction

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- Name
- Role in Organization (Ex: Developer, Tester, Architect etc.)
- Years of Experience
- Exposure to Chatbot development? Yes / No (If yes, mention Tool used)



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# Walkthrough of Course Handout

# Course Description



**Cognitive virtual assistant (CVA):** Use-cases; Classification of conversational AI platforms; Architecture of Conversational Platform; Deployment and Pricing models; Platform landscape; **Designing Bots:** Bot Architecture; Bot Anatomy; Design process overview; Branding, Personality, and Human Involvement; Conversation; Rich interactions; Engagement methods; Use case definition and exploration; Conversation scripting; Context and Memory; User testing;

**Designing Voice User Interfaces(VUI):** Conversational Voice User Interface(VUI); VUI Designer; VUI design principles; Designing effective process and dialogue; Personas, Avatars, Actors; Speech recognition technology; Advanced VUI Design; User testing;

**Development:** Building and deploying conversational AI assistants (voice assistants & chatbots) using cloud native / open source platforms such as Google Dialogflow, RASA or MS Bot framework; Bot Discovery and installation; Monetization; Analytics and Continuous improvement; **Trends:** SuperBot Platforms; Multiplatform Bots; Identity consolidation; Voice-enabled Devices - Smart Homes and Smart Cars as example environments.





# Course Objectives



No	Objective
CO1	Introduce the foundations of conversational AI and platforms
CO2	Understand key design concepts for Bots and Voice User Interfaces
CO3	Design Conversational Experiences across different use cases
CO4	Build AI chatbots and voice bots using practical toolkits



# Module Structure



Module	Description
1	Introduction
2	Bot Basics
3	Designing bot conversations
4	Case studies on bot design
5	Bot Building and Deployment
6	Designing Voice User Interfaces
7	Advanced VUI design
8	Building, Testing and Deploying VUI Apps
9	Building Multi-Lingual Virtual Agents
10	Trends (AI based Chatbots using LLMs)



# Contact Session wise Coverage

Session	Coverage
CS01	Introduction to course, History and evolution of Chatbots
CS02	Conversational Platforms - Architecture & use cases
CS03	Bot Basics
CS04	Designing of Bot Conversations
CS05	Context, Memory and Engagement methods
CS06	Bot Personality
CS07	Bot building - AIML
CS08	Bot building - RASA
CS09	Designing Voice User Interfaces
CS10	Personas, Avatars and Actors
CS11	Advanced VUI design
CS12	Building, Testing VUI Applications
CS13	Building Multi-lingual Virtual agents
CS14	Building Chatbots using LLMs/ SLMs, Fine Tuning and RAG Model
CS15	Building Chatbots using LLMs/ SLMs, Fine Tuning and RAG Model
CS16	Course Review and Discussion

# Experiential Learning (Demos)



Lab. No	Module No.	Session No.	Experiment	Tools list (Indicative only)
1	5	7 or 8	Demonstrate the design and development of a text-based bot for a simple use case. Deploy the bot on any one channel.	Wit.ai (from Meta), Botkit, Engati
2	8	12	Demonstrate the design and development of a virtual agent answering queries in both text and voice modes (English language). Deploy on any two channels.	Amazon Lex, Google DialogFlow
3	9	14	Extend the second experiment to include one more language (preferably Indian origin). Deploy on any two channels.	Engati (supports 30+ Indian languages), Amazon Lex (Hindi), Google Dialogflow (Hindi).
4	10	16	Create a simple chatbot using any large language model, employing no-code or low-code methods.	<a href="https://flowiseai.com/">https://flowiseai.com/</a>

# Evaluation



Evaluation Component	Name	Type	Weight	Duration
EC - 1	Assignment I		10%	
	Assignment II		10%	
	Assignment III		15%	
EC - 2	Mid-term Exam	Closed book	30%	2 hours
EC - 3	End Semester Exam	Open book	35%	2.5 hours

# Information!



1. All the sessions will be conducted on MS Teams, in online mode.
  2. EC-1 components (Assignments) will be administered on the Taxila portal.
  3. All the Course Material (Handout, PPTs etc.) will be uploaded on MS Teams.
  4. Announcements will be made on Taxila portal when,
    - (a) Assignment(s) are administered
    - (b) Rescheduling or Cancellation of class (if any)
    - (c) To notify the Syllabus for Mid-Sem and Comprehensive exams
    - (d) To upload the Scheme and Solution documents for Mid-sem and Comprehensive exams.
  5. Email for correspondence - [rbharathi@wilp.bits-pilani.ac.in](mailto:rbharathi@wilp.bits-pilani.ac.in)
- [Request - Mention the course code / course name in the subject line]



# Lecture No. 1

# Agenda



- Introduction to Course
- What is a Conversation?
- Difference between Human and Computer Conversation
- Types of Conversation
- Chatbot
- Generations / Evolution of Chatbots - G1,G2,G3



# Introduction to Course



## Handout Chatbot

URL - [https://app.engati.com/static/standalone/bot.html?bot\\_key=1b57451ae41c4a5f](https://app.engati.com/static/standalone/bot.html?bot_key=1b57451ae41c4a5f)

# What is a Conversation?



- A conversation is an “interactive exchange of information between two or more participants, typically involving spoken or written communication”.
- Dialogue - “Request-Response” mechanism
- It is a fundamental aspect of human interaction and serves various purposes:
  - sharing information [telephone call with friend]
  - expressing emotions [sharing happiness or grief]
  - building relationships [business communication]
  - solving problems [teacher solving a math problem]
  - making decisions [start-up business pitching or team selection in sports]
  - analysis [cricket match commentary, Olympics commentary]

# Conversation with a Computer / Machine

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What is different in Human-Computer Conversation,  
compared to Human-Human Conversation?

# Conversation with a Computer / Machine

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## Human-Computer Conversation

- Understanding of Vocabulary / Grammar / Language
- Nothing impromptu, everything is Training!
- Limited understanding of Context / Situation
- Willingness to learn and update from conversation?
- Perception of empathy is low

## Outcomes

- Sharing information [Handout bot / Weather Prediction]
- Solving problems [IVR - Customer care]
- Decision Making [Predictive Modeling]
- Analysis [of Sales in a quarter]

# Types of Conversations with Computers

Type of Conversation	Description	Example
Simple Request-Reply Interactions	Single question/answer	What is weather today Google search
Form-filling dialogues	One-way questions	Flight booking Restaurant reservation
Multi-turn dialogues	Multi-way interactions	Issue resolution Schedule a meeting
Contextual and Adaptive Conversations	multi-way interactions remembering context	Order coffee will remember 'cappuccino' from previous conversation

# Chatbot



## Some definitions of a Chatbot

- “A computer program designed to simulate conversation with human users, especially over the Internet”
- “An Artificial Intelligence program and a Human-Computer Interaction (HCI) model”
- “A Chatbot is an Artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in Natural Language (Text or Voice) through messaging applications, websites, mobile apps or through the telephone”

Paper – “Chatbots: History, technology, and applications”, Elsevier, 2020



# Evolution of Chatbots



## Names and Years from the Timeline:

- 1.ELIZA - 1965
- 2.PARRY - 1972
- 3.Jabberwacky - 1988
- 4.Dr. Sbaitso - 1992
- 5.A.L.I.C.E. - 1995
- 6.Smart Child - 2001
- 7.Siri (by Apple) - 2010
- 8.Google Now - 2012
- 9.Cortana & Alexa - 2014
- 10.Google Home - 2016
- 11.ChatGPT - 2022

<https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

# Evolution of Chatbots



In 2023 and 2024, several notable AI chatbots were introduced:

- **Claude** (March 2023)
- **Grok** (November 2023)
- **Gemini** (December 2023)
- **Claude 2** (July 2023)
- **Claude 3** (March 2024)
- **GPT-4o** (May 2024)
- **GPT-4o mini** (July 2024)
- **o1** (December 2024)

<https://www.chatbot.com/blog/future-of-chatbots/>



# Evolution (History)



## Three Generations of Chatbots

G1: Basic Chatbots (ELIZA, ALICE)

} Rule based

G2: Conversational AI Chatbots (Alexa, Siri)

} AI based

G3: Generative AI Chatbots (ChatGPT, Gemini)



1. Paper – “Chatbots: History, technology, and applications”, Elsevier, 2020
2. <https://onlim.com/en/the-history-of-chatbots/>

# Comparison of the Generations



Feature	G1: Basic Chatbots	G2: Conversational AI	G3: Generative AI
Technology	Rule-based scripting	NLP and AI algorithms	Large Language Models (LLMs)
Context Awareness	None	Limited	High
Learning	None	Narrow (task-specific)	Continuous improvement
Use Cases	Simulating conversations	Personal assistants, smart devices	Advanced dialogue, creative tasks
Examples	ELIZA, ALICE	Siri, Alexa	ChatGPT, Gemini

These generations highlight the significant evolution of chatbots, from rule-based interactions to intelligent, generative systems capable of dynamic and meaningful conversations.

# Turing Test [1950]



The Turing Test is a method of inquiry in artificial intelligence (AI) for determining whether or not a computer is capable of thinking like a human being.

The test is named after Alan Turing, the founder of the Turing Test and an English computer scientist, cryptanalyst, mathematician and theoretical biologist.

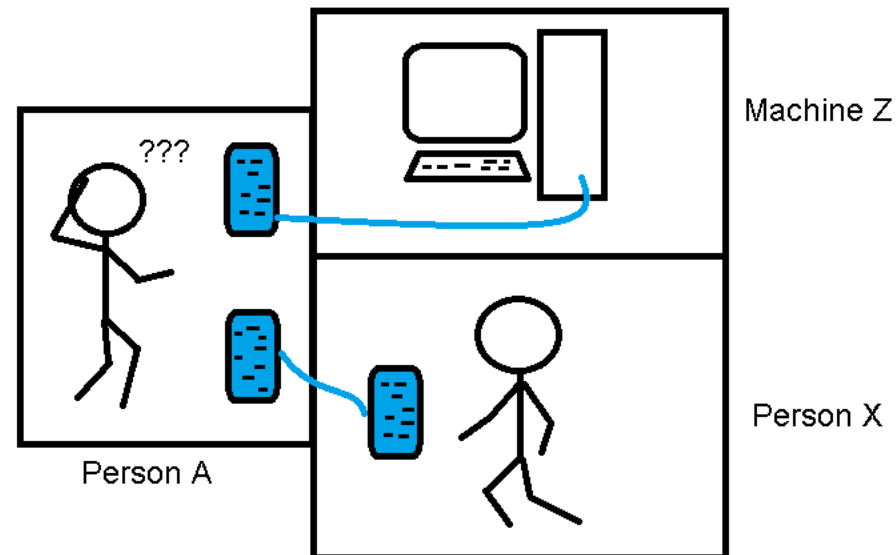
The Turing Test is a **simple method of determining whether a machine can demonstrate human intelligence**: If a machine can engage in a conversation with a human without being detected as a machine, it has demonstrated human intelligence.

The Turing test is an assessment to determine whether a machine is able to exhibit the same intelligence as a human. There are many variations of test.

# Turing Test



Suppose there is a dark room and we are outside of the room. Questions are being asked from the outside of the room to both the machine and a human, and if we cannot distinguish whether a person is answering the question or the machine is doing so, the machine will definitely pass the Turing test. It can also be thought as the machine has acquired intelligence which is similar to that of human. In other words, it is imitating human intelligence.



# Turing Test



## Chatbots and Conversational AI:

- Tools like **ChatGPT**, **Siri**, and **Alexa** showcase capabilities that could theoretically pass parts of the Turing Test in controlled scenarios.

## Loebner Prize:

- An annual competition awarding AI programs that come closest to passing the Turing Test.

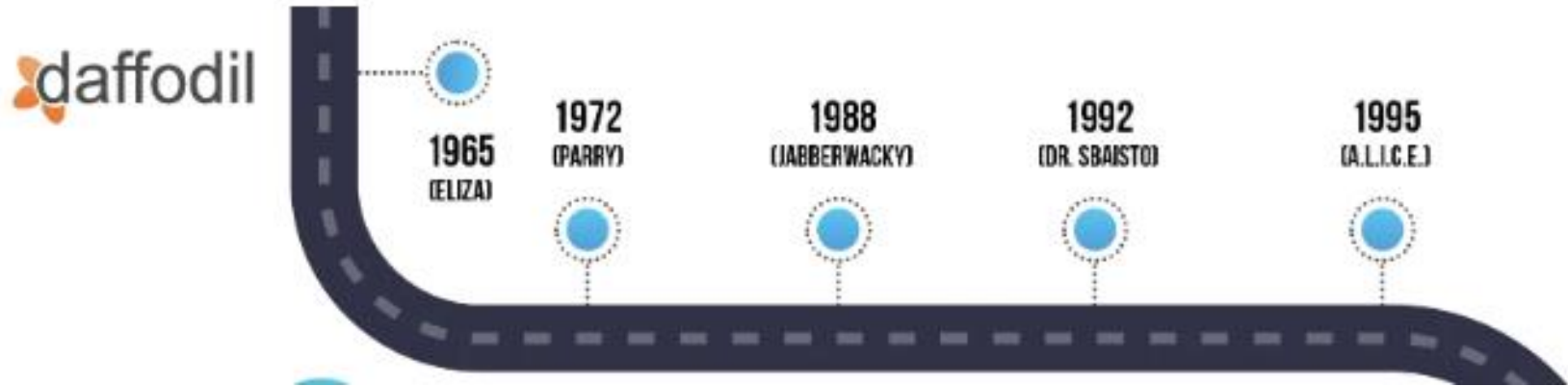
## Beyond the Turing Test:

- Contemporary AI evaluation focuses on specific benchmarks like problem-solving, learning, ethical reasoning, and general AI performance.

According to some predictions, the bots might pass the Turing test at the end of year 2029. But, is achieving human intelligence all we are looking for or should we work towards achieving true intelligence?

<https://chatbotsmagazine.com/how-close-are-chatbots-to-pass-turing-test-33f27b18305e>

# Generation 1



- ELIZA
- PARRY
- Jabberwacky
- Dr. Sbalisto
- A.L.I.C.E. (Artificial Linguistic Internet Computer Entity)

<https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

# Eliza (1965)



- First ever chatbot designed by Joseph Weizenbaum, Scientist at MIT
- Created as a psychology simulation experiment at MIT
- LISP programming language
- Script was called “DOCTOR”
- Used 200 keywords and some rules
- Acted as a empathetic psychologist to answer / reply to users
- [Interesting: Secretary using the program asked the professor to leave room - “would you mind leaving the room please?”]

## Limitation:

- Knowledge is limited to psychology domain
- Cannot engage in long conversations



# Try Eliza!



- URL - <https://web.njit.edu/~ronkowitz/eliza.html>

**Talk to Eliza by typing your questions and answers in the input box.**

```
> Hello, I am Eliza. I'll be your therapist today.  
* i am feeling low  
> How long have you been feeling low?  
* SINCE LAST 2 WEEKS  
> Can you elaborate on that?  
* I am not able to focus on work or life  
> Did you come to me because you are not able to focus on work or life?  
* yes  
> I see. Let's explore that a bit more.
```

TYPE HERE



# Parry (1972)



- Created by Kenneth Colby at Stanford
- Acted as a patient with “Schizophrenia”

\*Schizophrenia is a serious mental health condition that affects how people think, feel and behave. It may result in a mix of hallucinations, delusions, and disorganized thinking and behavior. Hallucinations involve seeing things or hearing voices that aren't observed by others.



# Parry (1972)



- Created by Kenneth Colby at Stanford
- Acted as a patient with Schizophrenia
- Has a “**Personality**” and more advanced than Eliza
- Better mental model: Parry has affective variables **Anger, Fear, Mistrust**
- "If Anger level is high, respond with hostility"

A group of 5 psychiatrists were asked to analyse conversations with real patients and PARRY conversations. Psychiatrists couldn't distinguish interviews with PARRY from text transcripts of interviews with real paranoids.

## Limitation:

- Cannot learn from conversation

# Parry's Persona



- 28-year-old single man, post office clerk
- No siblings and lives alone
- Sensitive about his physical appearance, his family, his religion, his education.
- Hobbies are movies and gambling on horseracing
- Recently attacked a bookie, claiming the bookie did not pay off in a bet
- Afterwards worried about possible underworld retaliation
- Eager to tell his story to non-threatening listeners

# When Eliza met Parry



# When Eliza met Parry



The session recorded below actually happened on 18 September 1972 and is herewith reproduced for your entertainment.

Good Evening. Tell me your problems. Please terminate input with a period or a question mark.

**\*People get on my nerves sometimes.**

I am not sure I understand you fully.

**\*You should pay more attention.**

Suppose you should pay more attention.

**\*You're entitled to your own opinion.**

What makes you think I am entitled to my own opinion?

**\*It bothers me just to be around people in general. Please go on.**

# Chatterbot (1991)



- The term **Chatterbot** was first mentioned in 1991.
- It was a TINYMUD (multiplayer real-time virtual world) artificial player, whose primary function was to chat.
- Refers to a type of artificial player or bot designed to engage in conversations with human players within a virtual world

# Jabberwacky (1988) and Dr. Sbaitso (1992)



## Jabberwacky

- First AI based bot
- Written in CleverScript, language based on spreadsheets
- Aimed to simulate natural human conversation in an entertaining way

## Dr. Sbaitso

- Created by Creative Labs
- Known for its full voice-operated chat program, which simulated conversing with a psychologist
- Played role of psychiatrist and displayed the digitized voices

# A.L.I.C.E. [Computer Name]



- A.L.I.C.E. is an acronym for “Artificial Linguistic Internet Computer Entity”
- Created in 1995 by Richard Wallace
- A universal language processing chatbot that used heuristic pattern matching to carry conversations.
- It was the first chatbot to run on a computer named Alice.
- The program worked with the XML schema known as **Artificial Intelligence Markup Language (AIML)**, which helped specify conversation rules

## Try ALICE

<https://www.pandorabots.com/pandora/talk?botid=b8d616e35e36e881>



- ALICE's Knowledge Base consisted of about **41,000** templates and related patterns, a vast number comparing to ELIZA that had only 200 keywords and rules

## Limitations

- Scripted responses based on pre-written patterns and templates. Limited NLU capability
- Static knowledge base with manual updating
- Simple pattern matching, no use of machine learning
- Does not maintain context between interactions

```
<aiml version="1.0.1" encoding="UTF-8">
```

```
<category>
```

```
<pattern>HELLO</pattern>
```

```
<template>
```

```
Hello! How can I help you today?
```

```
</template>
```

```
</category>
```

Question from  
User

Bot response

```
<category>
```

```
<pattern>HOW ARE YOU</pattern>
```

```
<template>
```

```
I'm just a computer program, so I don't have feelings, but  
thanks for asking! How can I assist you today?
```

```
</template>
```

```
</category>
```

```
<category>
```

```
<pattern>WHAT IS YOUR NAME</pattern>
```

```
<template>
```

```
My name is ALICE. What's your name?
```

```
</template>
```

```
</category>
```

```
<category>
  <pattern>MY NAME IS * </pattern>
  <template>
    Nice to meet you, <star />. How can I help you today?
  </template>
</category>

<category>
  <pattern>WHAT IS THE CAPITAL OF FRANCE</pattern>
  <template>
    The capital of France is Paris.
  </template>
</category>

<category>
  <pattern>THANK YOU</pattern>
  <template>
    You're welcome! Is there anything else I can help you with?
  </template>
</category>

<category>
  <pattern>GOODBYE</pattern>
  <template>
    Goodbye! Have a great day!
  </template>
</category>
</aiml>
```

“\*” Is wildcard pattern that matches any sequence of words from user's input

- <star /> represents the captured part of user's input, used in response template

Tell A.L.I.C.E:

Powered by [Pandorabots](#).

**Human:** my name is shreyas rao and bye

**A.L.I.C.E:** See you later. Hey shreyas rao and.

# Rule based Pattern Matching



- In a rule-based system, **predefined rules** determine the chatbot's responses.
- These rules are explicitly coded and match specific patterns of user input.
- The chatbot uses pattern matching techniques to identify predefined keywords or phrases in the user input and then applies the corresponding rule to generate a response.

# Example for Rule based Pattern Matching



**Scenario:** A customer service chatbot for a bank.

**Rule:** If the user's input contains the word "balance" the chatbot responds with,  
"Please provide your account number to check your balance"

**Scenario:** Handout (DCE - Chatbot)

**Rule:** If the user's input contains the word "course details" the chatbot responds with:

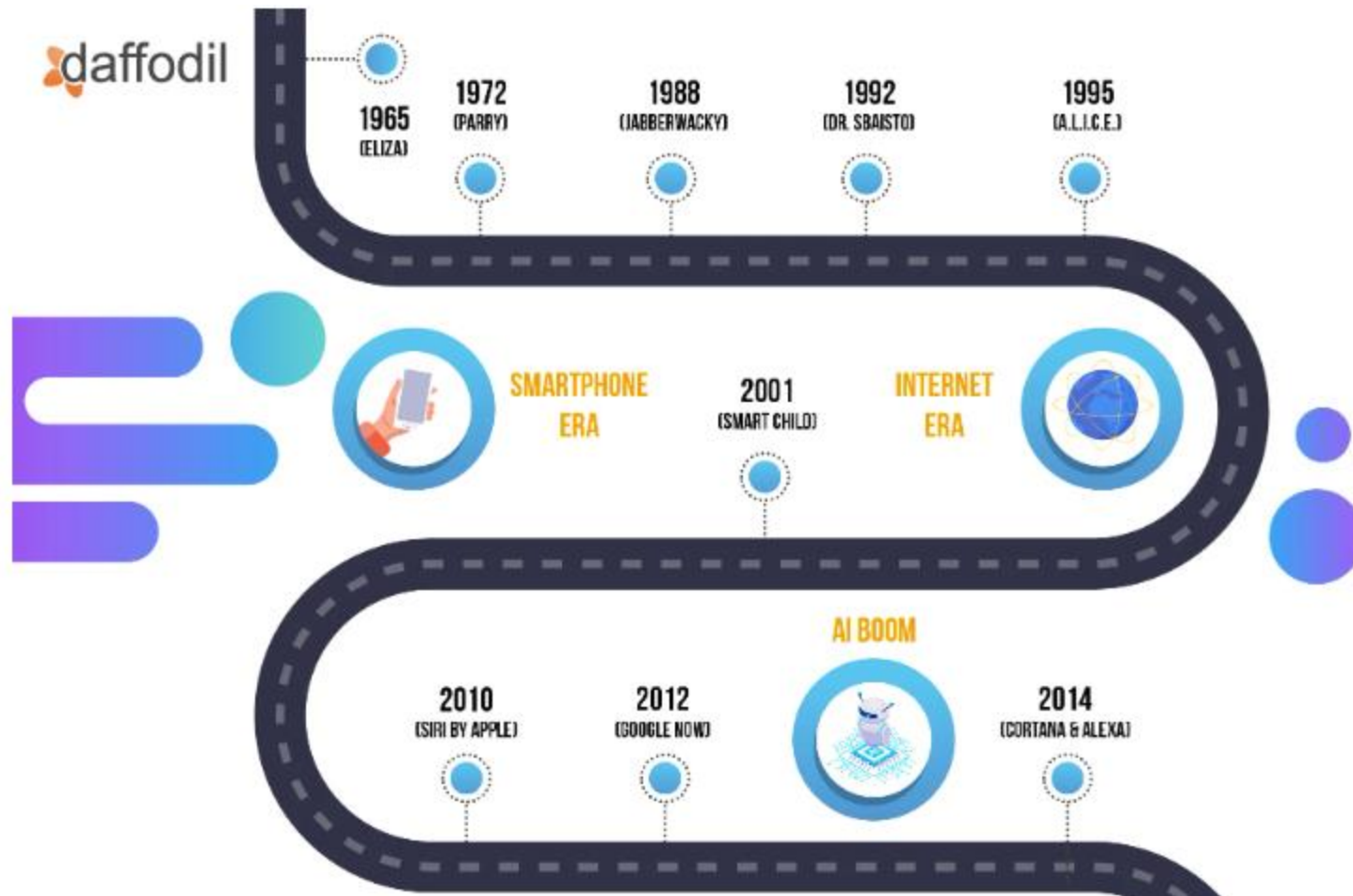
Course Title :Design of Conversational Experiences Course No :SE ZG530 Units  
:4 Course Author: Dr. Bharathi

# Generation 2

innovate

achieve

lead



Ref: <https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

# SmarterChild (2001)



- Significant step in chatbot industry
- First Text assistant
- **Assistant abilities** - First time that a chatbot could help people with **practical daily tasks (act as Assistant)** as it could retrieve information from databases about movie times, sports scores, stock prices, news, and weather.
- This ability marked a significant development in both the machine intelligence and human-computer interaction trajectories as information systems could be accessed through discussion with a chatbot.
- It could chat with users (only text based) and quickly find information from other sources
- **Integration** - Integrated with messenger applications like AOL (America Online) and MSN (Microsoft Messenger)

1. Paper – “Chatbots: History, technology, and applications”, Elsevier, 2020
2. <https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

# SmarterChild (2001)



- Try now - <https://smarterchild.chat/>
- [Explore the “Talk”. Latest updated in 2023]

**SmarterChild:** Hey! Remember me? I was the original chatbot way back in 2001!

**You:** Hi how are you doing?

**SmarterChild:** I'm doing great, thanks for asking! Feeling nostalgic chatting with you. How about you?

**You:** Doing great. how is the weather today?

**SmarterChild:** Weather is fine here in Windows XP Land but I can only see screens! By the way, wanna hear something cool? My great great grandchild, ChatGPT, taught me to speak! Turn up your volume and press the "talk" button when you're ready!

1. Paper – “Chatbots: History, technology, and applications”, Elsevier, 2020
2. <https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>



# Smart Personal Voice Assistants



- Development of AI Chatbots, acted as smart personal voice assistants
  - Apple Siri
  - IBM Watson Assistant
  - Google Now / Google Assistant / Google Mini
  - Microsoft Cortana
  - Amazon Alexa

1. Paper – “Chatbots: History, technology, and applications”, Elsevier, 2020
2. <https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

- Created by Apple in 2010
- Siri represented a big leap in chatbot technology, acting as a smart personal assistant with a user-friendly interface.
- Users can interact with Siri using text, audio, video, images
- Integration with Apple Device ecosystem (iPhone, iPad, Mac, Apple Watch, Apple TV etc.)
- Personalization (personalized responses) based on user's preferences, habits and data stored on device

1. Paper – “Chatbots: History, technology, and applications”, Elsevier, 2020
2. <https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

# Google Assistant



- Created as “Google Now” in 2012 by Google
- Initially delivered location and time-specific information
- Primarily designed for Smartphones
- Now it is renamed as Google Assistant - deliver information in a user-friendly format, anticipating users' needs even before they realize them
- Competitor to Siri
- Activities - Manage tasks, Plan your day, Get answers

1. Paper – “Chatbots: History, technology, and applications”, Elsevier, 2020
2. <https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

# Discussion



- List some of the ways that you use SIRI or Google Assistant for??

# Microsoft Cortana



- Created in 2014 by Microsoft
- Integrated into Windows Phone devices and Windows 10 PCs.
- It uses voice recognition and algorithms to respond to voice commands.
- Cortana can perform tasks like reminders based on time, places, or people, send emails and texts, create and manage lists, chit-chat, play games, and find facts, files, locations, and info among others.
- Microsoft's failure with windows phones, made them retire Cortana in Spring of 2023 from all windows platforms
- Microsoft "CoPilot" aims to replace Cortana

1. Paper – "Chatbots: History, technology, and applications", Elsevier, 2020
2. <https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

# Amazon Alexa



- Created in 2014 by Amazon
- A smart assistant that is built into devices like the Amazon Echo and Echo Dot
- Voice commands starting with "Alexa..." can play music, set alarms, stream videos, get news or weather reports, control your smart-home products.
- For developers - build and publish skills for Alexa using the Alexa Skills Kit (ASK)

1. Paper – “Chatbots: History, technology, and applications”, Elsevier, 2020
2. <https://insights.daffodilsw.com/blog/the-history-and-evolution-of-chatbots>

# Heuristic Pattern Matching



- Generation 2 and 3 chatbots use “Heuristic Pattern Matching” for determining the intent behind the user’s query.
- Heuristic pattern matching uses more flexible, probabilistic approaches to understand user input, often incorporating machine learning and natural language processing (NLP) techniques.
- This approach involves algorithms that identify patterns and learn from data to improve over time. It’s less rigid than rule-based systems and can handle more complex and varied inputs.

\*Heuristics are rules of thumb or strategies derived from experience, used to solve problems quickly and efficiently when optimal solutions are not feasible. They rely on practical knowledge and past experiences rather than systematic analysis.

# Example for Heuristic Pattern Matching



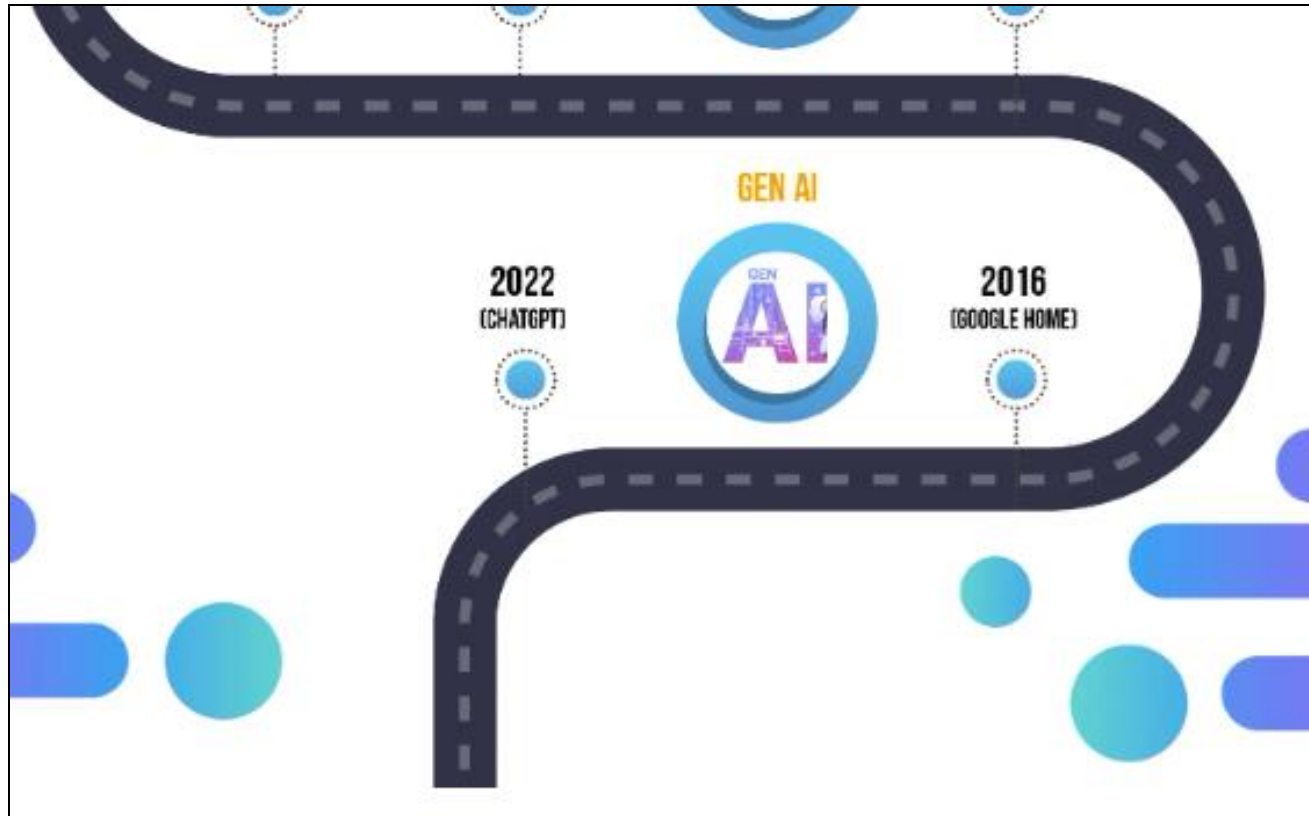
**Scenario:** A customer service chatbot for a bank.

## Heuristic Approach

- Uses NLP and machine learning to determine the intent behind the user's input.
- Uses a combination of regular expressions (regex), TF-IDF (bag of words), word embeddings (Word2Vec, GloVe), Contextual Embeddings (ELMo - Embeddings from Language Models) and / or Transformers (GPT, BERT, RobertA etc.)



# Generation 3



Generative AI refers to subset of AI technologies designed to create new content

# Generation 3



## Generative AI-based Chatbots

- **Advanced Conversational AI Models, not simple rule or script based bots**
- Large language models are designed to assist users in generating human-like text based on the given input.
- It can be utilized for a range of tasks, including content generation, summarization and language translation.

Ex:

- ChatGPT 3.5 or 4.0 [created in 2022 by Open AI]
- Gemini [Google]
- BlenderBot3 [Meta]
- Claude 3 [Anthropic]

# Try Generative-AI

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ChatGPT

Or

Meta AI with Llama 3.1 in Whatsapp



**Thank You!**