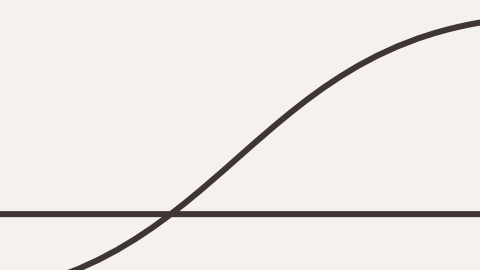




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# Pre-Diagnosis voice chatbot

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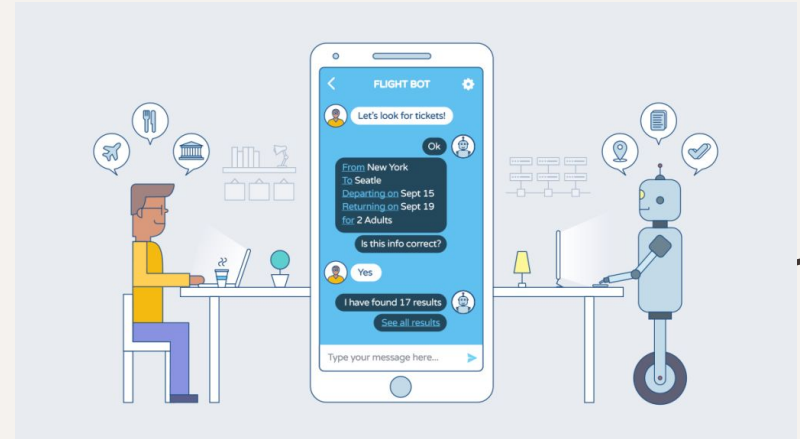
01

**Motivation**

# Intelligent agents: chatbots

Intelligent agents:

- Integrate our daily lives with the creation and analysis of intelligent software and hardware.
- Chatbot:
  - one of the most basic and widespread examples of intelligent human-computer interaction (HCI).



[1]

# Intelligent agents: chatbots

## Chatbots:

- Provides 24/7 access for consumers.
- Evolved beyond simple question-and-answer logic into automation and self-service.
- Enhance operational efficiency.
- They are useful in applications such as education, information retrieval, business, and e-commerce<sup>[3]</sup>.

	Basic chatbot	Chatbots with conversational AI
Online 24/7	✓	✓
Natural language understanding	Keyword-based tech	✓
Dynamic, context-based navigation	Button-focused navigation	✓
Multi-level intent hierarchy	If/Then statements	✓
Unlimited scalability	Limited improvement capacity	✓
Broad scope	Narrow scope	✓
3rd-party integration support	Limited understanding model	✓
Self-improving over time	⊘	✓
Consistently high-resolution rates	⊘	✓
Omni-channel	⊘	✓
Entity extraction	⊘	✓
User authentication	⊘	✓
Voice and conversational IVR	⊘	✓
Multilingual	⊘	✓
Privacy & security compliant	⊘	✓

[2] <https://www.boost.ai/guides>

[3] Abu Shawar, B.A., Atwell, E.S.: Chatbots: are they really useful? J. Lang. Technol. Comput. Linguist. 22, 29–49 (2007)

# Intelligent agents: chatbots

## Voice chatbots:

- Can capture, interpret, and analyse vocal input given by the speaker.
- Respond in similar natural language.
- Benefits:
  - Lower the barrier to use.
  - Overcomes language barriers.
  - Provides more “human-like” interactions.
  - Enables multitasking from the user side.



[4]

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02

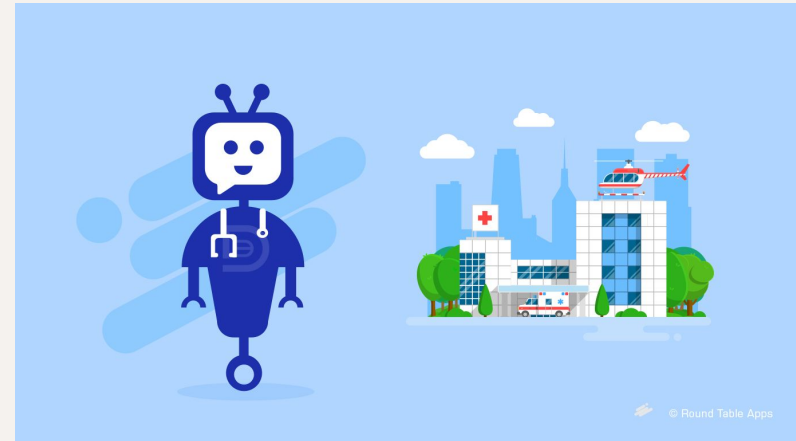
**Introduction**

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# Application of voice chatbot in medical domain

Imagine two scenarios:

- In hospital
- At home



[5]

[5]<https://chatbotsmagazine.com/how-chatbots-are-thawing-the-touch-of-technology-part-2-health-and-aged-care-a8a3aa8c7e1c>



# Application of voice chatbot in medical domain

In hospital:

- In a waiting room
  - Before seeing the doctor, you are welcomed by a pre-diagnosis voice chatbot.
  - Communicate with chatbot about your personal information (e.g., contact, symptoms.)



# Application of voice chatbot in medical domain

In hospital:

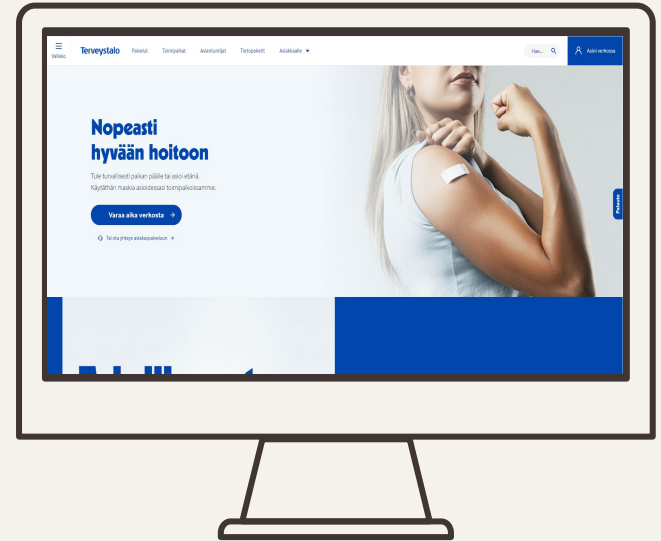
- In a waiting room
  - Your information will be automatically uploaded to the system.
  - The chatbot system can continuously updated related information during the inquiry via voice input.



# Application of voice chatbot in medical domain

At home:

- You want to make an appointment but don't know which department to go to.
- Talk with online voice chatbot about your symptoms.
- The chatbot will automatically book you with the correct department.

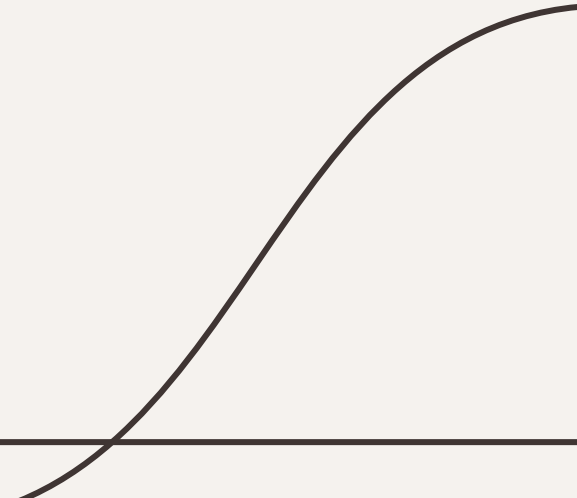


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# Dialogue Design

To gather information from two aspects:

- Personal contact information
- History of Pathology and symptom

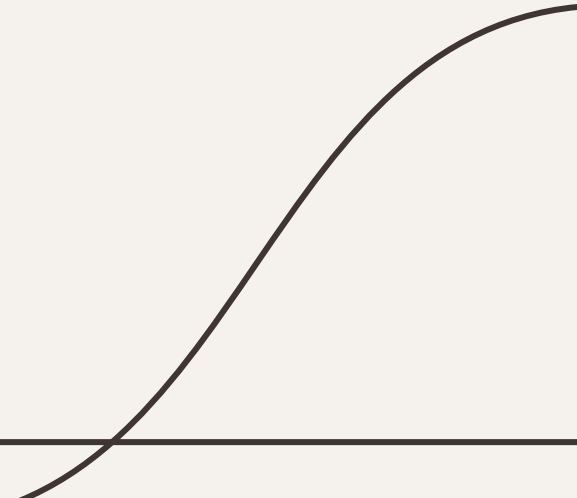


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# Dialogue Design

To gather information from two aspects:

- Personal contact information
  - Name
  - Phone number
  - Address

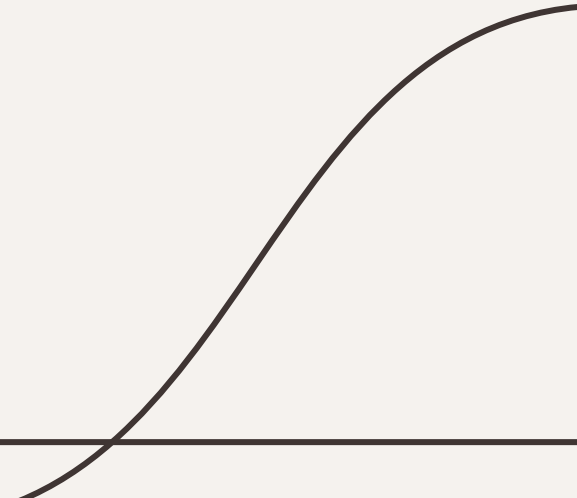


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# Dialogue Design

To gather information from two aspects:

- History of Pathology and symptom
  - Allergies
  - Pain
    - Area, frequency
  - Injury/Accidents
  - Related treatments



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**03**  
**Demo**

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Get started



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04

**Future plan**

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# Future plan



## Systematization

Integrate the remote booking, on-site diagnosis, treatment tracking and feedback systems (virtual healthcare principal).



## Seamless user experience

Better interface design. Flexible interaction system. Be personalize (e.g., incorporate an age-responsive design).

***Video call from robot and gesture reaction***

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**Thank you.**

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- 
1. Smooth conversation
  2. Hand free (generate the text at the same time) - generate questions based on the answer from the user
  3.
    - a. Guide user in a good way