



CURELINK

AI symptoms managing and doctor appointment booking agent

Powered by OpenAI

What is CURELINK what is its purpose?

- CURELINK is an interactive application using a chatbot-like environment, that helps prevent, organize and manage situations that require medical attention. It can be used both by patients and doctors
- CURELINK has 3 main intended uses
 - To inform the potentially ill user whether they should see a doctor, based on their described symptoms
 - To allow the potentially ill user to book an appointment with a relevant doctor, if the agent judges it necessary
 - To allow the doctor to insert available appointment slots in the database
 - To allow the doctor to keep track of their appointments, diagnosis and medication prescribed to their patients.

How does CURELINK work?

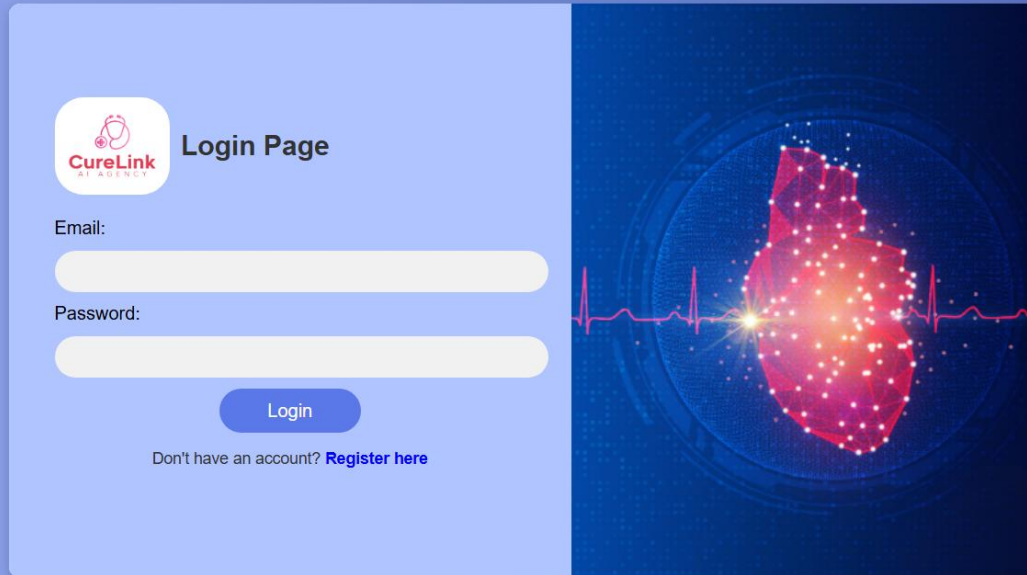
- CURELINK uses OpenAI's API to allow for interactive sessions between the user and a virtual bot, called **Assistant**
- The user describes his symptoms to the Assistant, and the Assistant asks more questions to gather information
- After a sufficient number of questions, the Assistant is able to decide whether the medical situation that user describes falls into one of the following categories:
 - The situation indicates an emergency, and the user has to be prompted to the ER as soon as possible.
 - The situation requires doctor assessment, but it is not a case of emergency. In that case, the user is prompted to book an appointment with a doctor from a list of doctors of relevant specialty, registered in the database.
 - The situation does not require doctor assessment, so the Assistant provides at-home management options.

How does the Assistant handle the information?

- The Assistant uses OpenAI API to extract useful data from the user's prompt, in a structured format.
- The Assistant is able to call routines, using the data that he extracted from the user prompt, as inputs. Some of these routines include:
 - Deciding what medical condition the symptoms are related to, based on the user prompt
 - Finding a relevant specialist, and using Google Maps API, determining the distances of the doctors, with respect to the users provided address
 - Booking appointments with doctors in the database
 - Extracting patient's information from the doctor, related to the already completed appointments
 - Extract available dates and times to schedule future appointments for the doctor.

Use case scenario 1: Register

The user can create an account , by clicking on “Register Here”



The image shows a login page for 'CureLink AI Agency'. The page is split into two sections. The left section is light blue and contains the login form. The right section is dark blue with a glowing red heart and a pulse line graphic. The login form includes the CureLink logo, the title 'Login Page', email and password input fields, a 'Login' button, and a link to 'Register here'.

CureLink
AI AGENCY

Login Page

Email:


Password:

Login

Don't have an account? [Register here](#)

Use case scenario 1: Register

The user has to provide personal information, as well as if he is a patient or a doctor



Register Page

Name:

Email:

Password:

Zip Code:

Street:

City:


Register as:

Patient

Patient

Doctor

[Already have an account? Login here](#)

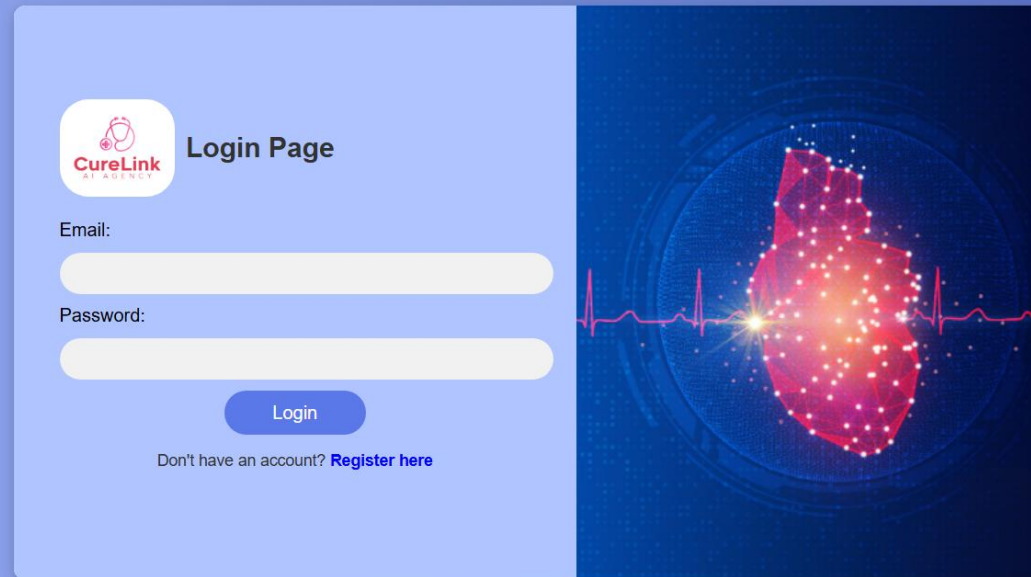


Use case scenario 1: Register clarification

- The user must provide accurate personal data, as they will be taken into consideration everytime he opens a session with the assistant
- If the zip code and the address are not relevant to Greece, the system will not store them. The authentication is done using the Google Maps API.

Use case scenario 2: Login

The user can login with an existing (to our database) account, or create a new one. There are 2 types of users, the patient and the doctor.



The image shows a login page for 'CureLink AT AGENCY'. The page is split into two sections. The left section is light blue and contains the login form. The right section is dark blue with a glowing red heart and a heartbeat line. The login form includes a logo, a title, email and password input fields, a login button, and a register link.

CureLink
AT AGENCY

Login Page

Email:

Password:

Login

Don't have an account? [Register here](#)

HOMEPAGE



You have successfully logged in!

For any health problem, the agent is here for you!

To Analyze your Symptoms:

[Click here!](#)

To see your appointments:

[Click here!](#)

To view your account details:


[View Account](#)

Logout from the system:

[Logout](#)

Use case scenario 3: Analyze symptoms

The first patient message is automatically generated, based on the family history, gender and age provided during the user registration



Symptom Analysis

user: I am a male, 71 years old, and my family history includes Gastroesophageal Reflux Disease

Your response:

[Submit](#)

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Use case scenario 3: Analyze symptoms

Based on the family history, and the symptoms provided, the Assistant recommends the user to see a Gastroenterologist. He will also ask if the patient needs PWD access



Symptom Analysis

assistant: I can see that you are a male, 71 years of age. Your family history includes: Gastroesophageal Reflux Disease. What are your symptoms?

user: my stomach hurts and it has a burning sensation

assistant: Can you describe when the burning sensation started and if it occurs after eating? Also, do you experience any other symptoms like nausea, vomiting, or difficulty swallowing?

user: it occurs after eating. I don't have any other symptoms

assistant: You might have Gastroesophageal reflux disease (GERD). I recommend seeing a Gastroenterologist.

assistant: Do you need PWD (people with disabilities) access?

user: Yes, i need PWD access

assistant: I have noted that you need PWD (people with disabilities) access. Let's move on with booking

Your response:

Submit

See all available appointments in your area

Book now

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Use case scenario 3: Analyze symptoms

Clarifications

- After deciding that the patient needs to see a doctor, and before prompting him to book an appointment, the agent will ask the user if he needs PWD access
 - If the patient says yes, then only relevant doctors with PWD access will be shown on the next page
 - If the patient says no, then all available relevant doctors will be shown on the next page
- If the patient's first prompt indicates that he wants to see a doctor, without providing symptoms, the agent will prompt him to book an appointment immediately
- The assistant can understand whether the patient is providing medically relevant information or not. If the information is not relevant, the Assistant will ask the user to provide medical information only.
- The assistant **can not** be used as a general purpose chat-bot.

Use case scenario 4: Book doctor appointment

If the patient clicks on “Book Appointment”, he will be redirected to a page, showing the available appointments stored on the database, for the relevant to the patient’s symptoms specialty.



Available Appointments

assistant: I found 2 Gastroenterologist(s) with pwd access near you. Here are some options:

Name	Specialty	Address	Distance (km)	Access for Disabled People	Available Appointments
Kyriaki Lappa	Gastroenterologist	Psaron 3, Thessaloniki	2.89	Yes	<div>Hide Available Appointments</div> <div>2025-02-24 10:00:00, 2025-02-24 12:00:00, 2025-02-24 13:00:00, 2025-02-24 15:00:00, 2025-02-24 16:00:00, 2025-02-25 11:00:00, 2025-02-25 12:00:00, 2025-02-25 13:00:00, 2025-02-25 16:00:00, 2025-02-26 10:00:00, 2025-02-26 11:00:00, 2025-02-26 12:00:00, 2025-02-26 13:00:00, 2025-02-26 14:00:00, 2025-02-26 15:00:00, 2025-02-26 16:00:00, 2025-02-25 10:00:00, 2025-02-25 13:00:00, 2025-02-25 14:00:00, 2025-02-25 15:00:00, 2025-02-26 10:00:00, 2025-02-26 11:00:00, 2025-02-26 13:00:00, 2025-02-26 14:00:00, 2025-02-26 16:00:00</div>
Marilena Kalaitzidou	Gastroenterologist	Orestou 14, Thessaloniki	2.91	Yes	<div>To see available appointments click here</div>

Your Message:

Send Message

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Use case scenario 4: Book doctor appointment

- The patient can instruct the Assistant to book an appointment, providing the doctors name , the appointment date and time. The user can also provide a relevant date, e.g. next Tuesday.
- The patient has declare a date and a time. The patient can also refer to the doctor via name or surname only (instead of the fullname). The Assistant can also recognize if the user made a typo.
- If the typo is minor, e.g. a missing letter, the Assistant will understand what the patient was intending to type. If he is not sure, he will ask the user for clarification

Use case scenario 4: Book doctor appointment

With typos, relevant date format and non-24H stating



Available Appointments

assistant: I found 2 Gastroenterologist(s) with pwd access near you. Here are some options:

Name	Specialty	Address	Distance (km)	Access for Disabled People	Available Appointments
Kyriaki Lappa	Gastroenterologist	Psaron 3, Thessaloniki	2.89	Yes	To see available appointments click here
Marilena Kalaitzidou	Gastroenterologist	Orestou 14, Thessaloniki	2.91	Yes	To see available appointments click here

user: I want an appointment with Kyriaki Lap on February 24 of 2025, at 3 P.M.

assistant: Appointment at 2025-02-24 15:00 has been booked successfully.

Your Message:

[Send Message](#)

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Use case scenario 5: See scheduled and completed appointments (both for simple user and doctor)

- Both a simple user (patient) and a doctor can see their scheduled and completed appointments, the relevant diagnosis and the medication, by clicking on “To see your appointments: Click here!” button.
- The patient will be redirected to a new page, where 2 tables will be visible
 - The first table refers to the scheduled (future) appointments
 - The second table refers to the completed appointments
- Completed appointments can have a diagnosis and a medication, whereas scheduled appointments can not.

Use case scenario 5: See scheduled and completed appointments showcase

Your Appointments					
Scheduled Appointments					
Doctor Name	Specialty	Appointment Date & Time	Status	Diagnosis	Medicine
Fotini Drougou	Radiologist	2025-02-24 10:00:00	scheduled	None	None
Kyriaki Lappa	Gastroenterologist	2025-02-24 10:00:00	scheduled	None	None
Panagiotis Daskalakis	Pediatrician	2025-02-24 11:00:00	scheduled	None	None
Anastasia Tsitsigka	Cardiologist	2025-02-24 12:00:00	scheduled	None	None
Rania Papoulia	Urologist	2025-02-24 13:00:00	scheduled	None	None
Kyriaki Lappa	Gastroenterologist	2025-02-24 13:00:00	scheduled	None	None
Alexandros Koutoupis	Gynecologist	2025-02-24 14:00:00	scheduled	None	None
Marilena Koutsou	Sleep Medicine Specialist	2025-02-24 15:00:00	scheduled	None	None
Kyriaki Lappa	Gastroenterologist	2025-02-24 15:00:00	scheduled	None	None
Pavlos Markopoulos	Plastic Surgeon	2025-02-24 16:00:00	scheduled	None	None
Dionysios Kyriakidis	Obstetrician	2025-02-25 10:00:00	scheduled	None	None
Maria Vassilaki	Orthopedic Surgeon	2025-02-25 11:00:00	scheduled	None	None
Markos Papagiannis	General PractitionerHematologist	2025-02-25 12:00:00	scheduled	None	None
Haris Tsalouchidis	Infectious Disease	2025-02-25 13:00:00	scheduled	None	None
Panagiotis Kourkouvelis	Oncologist	2025-02-25 14:00:00	scheduled	None	None
Fotini Anastasopoulou	Internist	2025-02-25 15:00:00	scheduled	None	None
Giorgos Athanasiou	Sports Medicine Physician	2025-02-25 16:00:00	scheduled	None	None
Panayiotis Theodoridis	Rheumatologist	2025-02-26 10:00:00	scheduled	None	None
Stamatia Iliadou	Plastic Surgeon	2025-02-26 11:00:00	scheduled	None	None
Lambros Kourtis	Urologist	2025-02-26 12:00:00	scheduled	None	None
Irene Karachaliou	Endocrinologist	2025-02-26 13:00:00	scheduled	None	None
Charalambos Ioannou	Sports Medicine Physician	2025-02-26 14:00:00	scheduled	None	None
Giorgos Nikolaidis	Hepatologist	2025-02-26 15:00:00	scheduled	None	None
Thanasis Kriaras	Infectious Disease	2025-02-26 16:00:00	scheduled	None	None

Use case scenario 5: See scheduled and completed appointments showcase

Completed Appointments

Doctor Name	Specialty	Appointment Date & Time	Status	Diagnosis	Medicine
Giannis Nassiopoulos	Oncologist	2025-02-14 16:00:00	completed	Healthy	None
Marios Economidis	Nephrologist	2025-02-14 15:00:00	completed	Healthy	None
Vassilios Zannis	Dermatologist	2025-02-14 14:00:00	completed	Healthy	None
Nikolas Adamopoulos	Hepatologist	2025-02-14 13:00:00	completed	Healthy	None
Michail Papageorgiou	Pulmonologist	2025-02-14 12:00:00	completed	Healthy	None
Katerina Christodoulidou	Internist	2025-02-14 11:00:00	completed	Healthy	None
Giorgos Papakostas	Endocrinologist	2025-02-14 10:00:00	completed	Healthy	None
Andreas Drougou	Ophthalmologist	2025-02-13 16:00:00	completed	Healthy	None
Stelios Zervos	Allergist and Immunologist	2025-02-13 15:00:00	completed	Healthy	None
Anastasia Manousaki	Neurologist	2025-02-13 14:00:00	completed	Healthy	None
Alexandra Anastasopoulou	Sports Medicine Physician	2025-02-13 13:00:00	completed	Healthy	None
Marianna Papalexopoulou	Ophthalmologist	2025-02-13 12:00:00	completed	Healthy	None
Eleni Ioannou	Otolaryngologist	2025-02-13 11:00:00	completed	Healthy	None
Zoe Christodoulidou	Oncologist	2025-02-13 10:00:00	completed	Healthy	None

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Use case scenario 6: See account details

If the user (patient or doctor) clicks on “View account”, on the Homepage, he will be redirected to a page with his account details, where he can edit them.



Your Details


Name	Thanasis Kalogirou
Email	thanasis.kalogirou@email.com
Street	Ioulanou 8
Zip Code	54635
Age	71
Gender	male
Medical Record	None
Family History	Gastroesophageal Reflux Disease

Edit

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Use case scenario 7: Booking appointments as doctor user

If the user clicks on “View account”, he will be redirected to a page with his account details, where he can edit them. The Assistant can decide whether the given information is relevant to appointment booking, reminding the user to provide relevant information



Your personal agent

assistant: What can I help you with?

user: I want to schedule appointments for Friday from 10 am to 14 pm in 30 minutes intervals

assistant: Successfully added 9 slots as these were available in your schedule.

user: I want a coffee

assistant: My purpose is to assist with scheduling appointments. If you need help with that, please let me know!


Your response:

Submit

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Use case scenario 8: Seeing past and scheduled appointments

- By clicking on “View your appointments”, as a doctor, the user will be redirected to page where both past and scheduled appointments are visible, with the relevant diagnosis and medicine prescribed to each patient.



Your Past Appointments

Appointments with Diagnosis

Patient Name	Appointment Date & Time	Status	Diagnosis	Medicine
Ioannis Kiriakou	2025-02-13 16:00:00	completed	Healthy	None
Foteini Kourou	2025-02-13 15:00:00	completed	Healthy	None
Antonis Markou	2025-02-13 12:00:00	completed	Healthy	None

Appointments without Diagnosis

Patient Name	Appointment Date & Time	Status	Diagnosis	Medicine
Kostantinos Prassas	2025-02-26 16:00:00	scheduled	None	None
Dimitrios Konstantinidis	2025-02-25 16:00:00	scheduled	None	None
Ioannis Farfaras	2025-02-25 13:00:00	scheduled	None	None
Christos Alexandrou	2025-02-25 11:00:00	scheduled	None	None
Aikaterini Lamprou	2025-02-24 16:00:00	scheduled	None	None

[Give Feedback](#)

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Use case scenario 8: Seeing past and scheduled appointments

- By clicking on “Give feedback” the doctor can provide a diagnosis and a medication for a patient he examined, which will flag the relevant appointment from scheduled to completed.

Appointments with Diagnosis

Patient Name	Appointment Date & Time	Status	Diagnosis	Medicine
Ioannis Kiriakou	2025-02-13 16:00:00	completed	Healthy	None
Foteini Kourou	2025-02-13 15:00:00	completed	Healthy	None
Antonis Markou	2025-02-13 12:00:00	completed	Healthy	None

Appointments without Diagnosis

Patient Name	Appointment Date & Time	Status	Diagnosis	Medicine
Kostantinos Prassas	2025-02-26 16:00:00	scheduled	None	None
Dimitrios Konstantinidis	2025-02-25 16:00:00	scheduled	None	None
Ioannis Farfaras	2025-02-25 13:00:00	scheduled	None	None
Christos Alexandrou	2025-02-25 11:00:00	scheduled	None	None
Aikaterini Lamprou	2025-02-24 16:00:00	scheduled	None	None

Give Feedback

I examined Kostantinos Prassas and i found that he has covid. I prescribed antibiotics.

Submit

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Use case scenario 8: Seeing past and scheduled appointments as doctor user

Appointments with Diagnosis

Patient Name	Appointment Date & Time	Status	Diagnosis	Medicine
Kostantinos Prassas	2025-02-26 16:00:00	completed	covid	antibiotics
Ioannis Kiriakou	2025-02-13 16:00:00	completed	Healthy	None
Foteini Kourou	2025-02-13 15:00:00	completed	Healthy	None
Antonis Markou	2025-02-13 12:00:00	completed	Healthy	None

Appointments without Diagnosis

Patient Name	Appointment Date & Time	Status	Diagnosis	Medicine
Dimitrios Konstantinidis	2025-02-25 16:00:00	scheduled	None	None
Ioannis Farfaras	2025-02-25 13:00:00	scheduled	None	None
Christos Alexandrou	2025-02-25 11:00:00	scheduled	None	None
Aikaterini Lamprou	2025-02-24 16:00:00	scheduled	None	None

user: I examined Kostantinos Prassas and i found that he has covid. I prescribed antibiotics.

assistant: Appointment for Kostantinos Prassas updated successfully

Give Feedback

Use case scenario 8: Seeing past and scheduled appointments clarification

- The doctor can make a diagnosis, without necessarily prescribing medication to a patient
- If the doctor gave no diagnosis, the patient is flagged as healthy.

Appointments with Diagnosis

Patient Name	Appointment Date & Time	Status	Diagnosis	Medicine
Kostantinos Prassas	2025-02-26 16:00:00	completed	covid	antibiotics
Ioannis Kiriakou	2025-02-13 16:00:00	completed	Healthy	None
Foteini Kourou	2025-02-13 15:00:00	completed	Healthy	None
Antonis Markou	2025-02-13 12:00:00	completed	Healthy	None

Appointments without Diagnosis

Patient Name	Appointment Date & Time	Status	Diagnosis	Medicine
Dimitrios Konstantinidis	2025-02-25 16:00:00	scheduled	None	None
Ioannis Farfaras	2025-02-25 13:00:00	scheduled	None	None
Christos Alexandrou	2025-02-25 11:00:00	scheduled	None	None
Aikaterini Lamprou	2025-02-24 16:00:00	scheduled	None	None