Towards a Conversational-Based Agent for Health Services

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Introduction

Conversational agents are software-based systems designed to interact with humans using natural language

The recent surge of **advanced language models** (GPT family) has brought further attention to the usage of such agents

The unexpected backfire in the popularity of chatbot-like agents could be beneficial to less explored fields, such as **public administration** (P.A.)

Introduction

A service provided by the P.A. is **allowing citizens for accessing their Electronic Health Record** (EHR)

The Italian Government published, in 2014, the guidelines for the presentation of **regional projects plans for the creation of the EHR** (*Fascicolo Sanitario Elettronico*)

In February 2023, the technical specifications for **interoperability between regional systems** have been published

Aims

Proposing a **conversational agent-based access modality for citizens to their EHR**

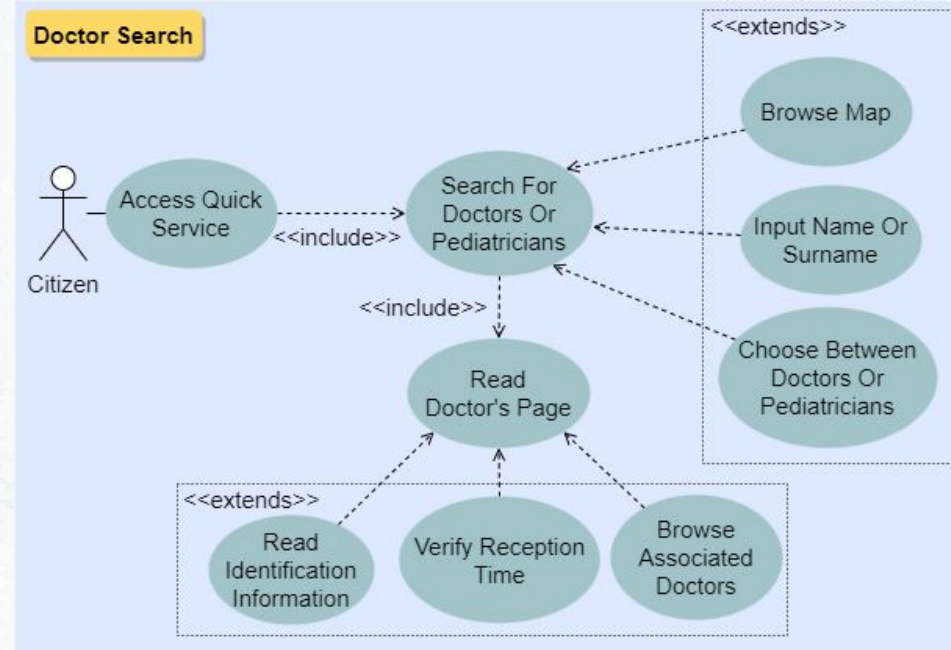**Conversation model** for the implementation of a first working prototype

Simple and specific use case of the SeSaMo portal, the EHR access modality provided by the Italian region Friuli-Venezia Giulia

Searching For a Doctor

The SeSaMo portal provides, along with the main features, a set of "quick services" which **complement the EHR access and browsing**

A citizen of the Friuli-Venezia Giulia region **may search for a doctor or a pediatrician** by using one of such services

User Interface

Searching for **doctors and pediatricians** in the municipality of Udine

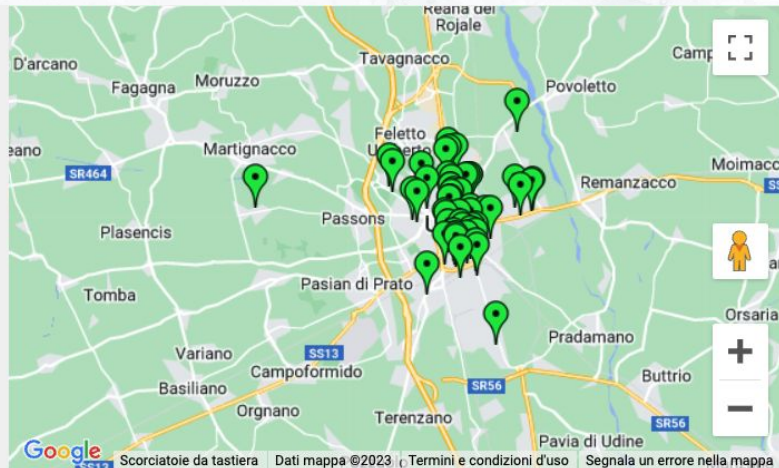| Filtra elenco per:	

Cognome e/o nome

Digita almeno 3 caratteri

Comune dell' ambulatorio
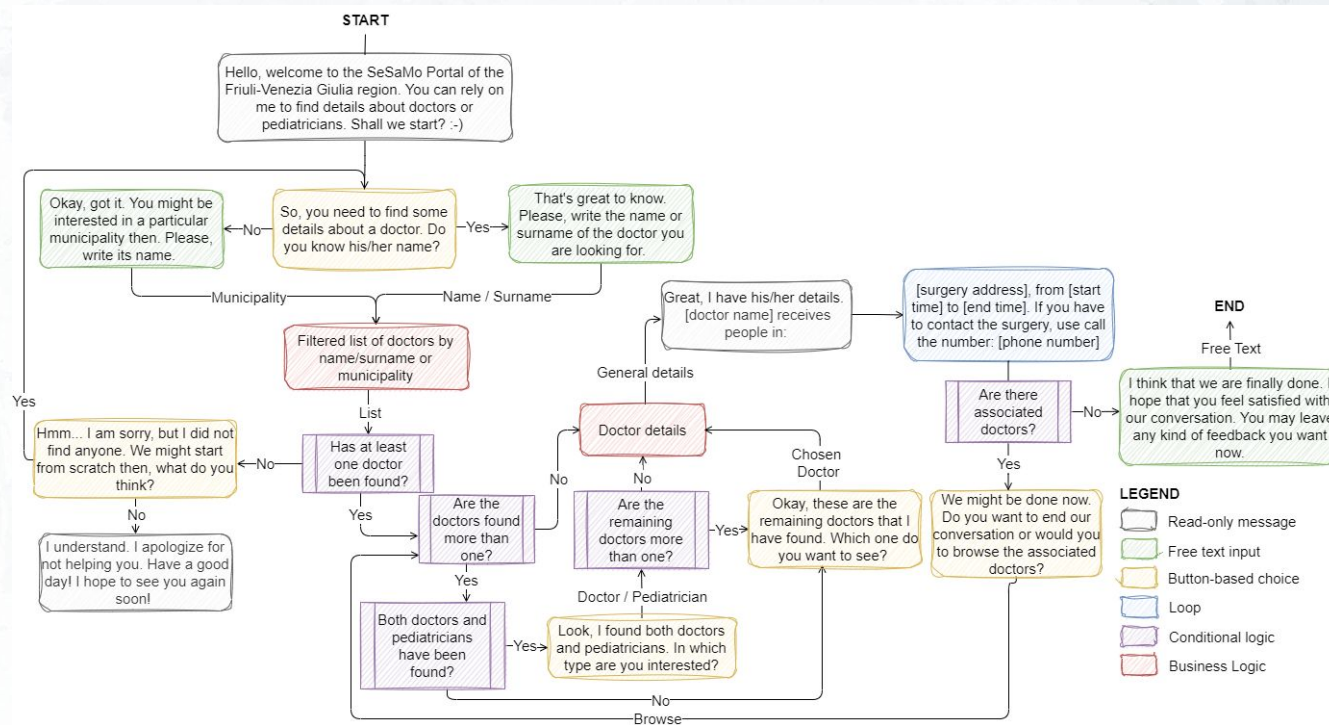
UDINE

☑ **Medici**   ☑ **Pediatri**

Trovati 69 medici in base ai filtri impostati

👤 **ANTONUTTI VIVIANA (ASU FC – Azienda Sanitaria Universitaria Friuli Centrale)**

👤 **BARACCHINI PAOLA (ASU FC – Azienda Sanitaria Universitaria Friuli Centrale)**

The Conversation Model

Graph used to represent the **conversation between the citizen and the chatbot-like conversational agent** while using the quick service

Conclusions

Even a **simple use case** such as searching for a doctor involves a **not-so-trivial interaction** with the system

The **advanced language models** could be used to **understand the intent** of the citizen

The considered use case allows for laying the foundations for future versions which will provide **more advanced EHR-related features** available in the SeSaMo portal **in a conversational fashion**

Future Challenges

The **quick services** of the portal are mostly complementary and **do not access the sensitive data** of the citizen. Some kind of **authentication modality** will be needed, along with at least a sample of the true underlying data (SPID?!)

Exploitation of **Large Language Models** (ChatGPT-like) and **voice-based communication** as an alternative input modality

It will be essential to ensure that the conversational agent adheres to **ethical principles**, such as **transparency** and **privacy**

Any suggestions?

Thanks!

Any question?