Modes of Implementation

Abstract

Chapter 6 of Library Technology Reports *(vol. 49, no. 8), "Streamlining Information Services Using Chatbots," shows how chatbots can enhance your information services in a variety of locations and implementations. Consider a text-only enhancement to the catalog interface, a fully animated and voiced help page for the library website, a stand-alone information kiosk to welcome customers inside (or outside) the library building, or a mobile phone information interface.*

Text Only

The chatbots we've been discussing can be implemented in a variety of places within the library's virtual and physical environment. The ability to use the same bot code in a number of places and targeting a number of different user types is one of the ways chatbots provide efficiency and prove their value in a library environment.

Let's start with the simplest, text-only interface. This is a great vehicle to enhance an existing online catalog. Placed in this location, the bot can provide instruction and explanation of simple tasks (renewing books or placing a hold) and give information about the library's policies and resources (lending periods, overdue charges, microform use, online bill payment, etc.). Figure 6.1 shows an online catalog search screen featuring text-only chatbot help.

Web Help Screen

In addition to the very simple interface shown in figure 6.1, the bot can be deployed on the library's help page as a fully functioning (speaking and moving) avatar. Here users can not only ask questions about the library's resources and services, but, if the bot is coded to the highest tier of functionality, address questions about other topics and receive information from other resources.

Instructional and informational text on the page could identify the resources to which the bot can pass users and could give tips for most efficiently formulating searches to be thus passed. Here users could also be reminded to turn off their pop-up blocker software in order to allow the bot to provide results from those resources to which it passes inquiries. However, the primary goal of the chatbot's natural-language coding is to render such additional text unnecessary. Thus, the user should also be able to simply enter into a conversation, receiving access to connected resources and instructions about pop-up–blocking software in the natural progression of the conversation with the chatbot. Figure 6.2 shows a website help screen with a virtual avatar that speaks audibly.

Home Page Mini-Avatar

It is also possible to capitalize on the branding a virtual avatar can provide by using a small version on the library's home page. This can simply be a smaller version of the full avatar, or it can be a specially prerecorded message telling about the library's newest programs or highlighting particular resources or services. The text-to-speech capability provided by full subscription to an avatar site such as SitePal allows us to customize the message or embed pass-through links to pertinent resources. Figure 6.3 shows a mini-avatar

Figure 6.1
Text-only chatbot help on a catalog search page.

Figure 6.2
Speaking and moving avatar on a library help page.

Figure 6.3
Mini-avatar promoting special library programs or services.

used to advertise special programs or services.

Mobile Web Page

With the explosion of smartphone and tablet use, it is also wise to create a mobile access page for the library's chatbot. In order to minimize the data used to access this version of the bot, we've used the text-only interface with a simple thumbnail image to maintain the branding of the site. Users with smartphones that provide speech-to-text capability can simply speak their question into the phone to receive a response. Encourage use of the mobile site by adding a QR code to brochures and posters that smartphone and tablet users can scan to reach the interface. Figure 6.4 shows a mobile text-only implementation with a static image.

The four implementations described above have focused on the needs of users who are outside the library. There are also two implementation scenarios specially designed for in-house users.

Information Kiosk

Upon entering large office buildings or malls, visitors will often be provided with an information kiosk to assist them in finding the stores, offices, and services they seek. Using a similar paradigm, you can create an information kiosk tailored to the needs of your visitors. Here the first step is to identify the questions most frequently asked by visitors upon entering the building. Using these questions, you can create a touch-screen interface to help users quickly find the information they need. However, there are always questions for which you won't have "quick buttons." To answer these, you can create a special version of your chatbot with knowledge tailored to the needs of users within the library itself. This includes answers to such questions as "Where are the restrooms located?", "Where can I get my parking ticket validated?", and "Where are your audiobooks?"
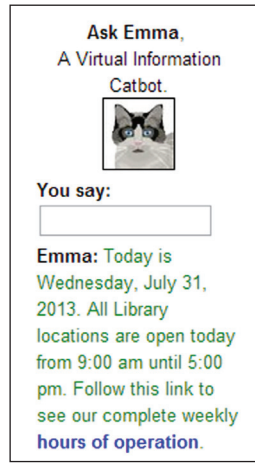
You may wish to add this type of information to the existing chatbot or create a separate kiosk bot that will focus on such directional inquiries, referring deeper questions to human library staff (see figure 6.5). The coding for a touch-screen kiosk display has been developed by Kaylin Boehme, currently a librarian at Brown Mackie College, and was used successfully in the implementation of such an installation in a public library in Ohio.

Desktop Icon

Many chatbots are implemented to assist users in navigating websites and computer programs. With this in mind, you may wish to add a chatbot interface that is easily accessible to patrons at library computers. To this end, you can create a desktop icon that will open a web browser to the chatbot's help screen (see figure 6.6). This will allow users to click the icon and immediately access the fully animated and voiced interface from their computer station. This may be particularly

useful for computer use–related questions like "How do I print?", "How can I save the changes to this resume?", or "How can I send these pictures to my granddaughter?"

In creating such an easy-access point, it will be important to connect your chatbot, using either hyperlinks or passing inquiries, to a good computer instructional resource and to provide coded categories that explain how the internal computer stations function.

Mobile Apps

Intelligent apps and mobile virtual assistants now exist for both Android and iOS devices, and their number continues to grow. CallMom, an open-source Siri-like virtual assistant written in AIML, appeared in April 2012 and now has several varieties available. ChatScript has also had notable success with several children's apps: Outfit7's extremely popular Tom Loves Angela and Talking Angela and InfAspire's Chatty Addie. Libraries wishing to create an intelligent mobile app have a range of options, with solutions to match their own programming ability, available development time, and budget.

CallMom (Free, Android only, AIML)

CallMom is Pandorabots' mobile virtual assistant. This is probably the easiest way to create an intelligent app, since CallMom may be used with any existing Pandorabot. CallMom uses speech recognition and voice synthesis, but also supports text input and output. Like any AIML bot, CallMom can chat, search the Web or library catalog, open URLs, etc. It can also control device actions, for example, dial a number, send an SMS or e-mail message, find locations on a map, and check the device's battery status. Customizing CallMom is straightforward:

1. Sign up for a free Pandorabots account, if you haven't already.
2. Create or customize your bot. You can build one from scratch or modify an AIML set, such as infoTabby.
3. Download and install CallMom on your device.
4. Under Menu > Settings, choose Select Your Own Pandorabot. Now enter your Pandorabot's server name and botid to connect CallMom to your bot.

Figure 6.4
Mobile access page with text-only chatbot and static image.
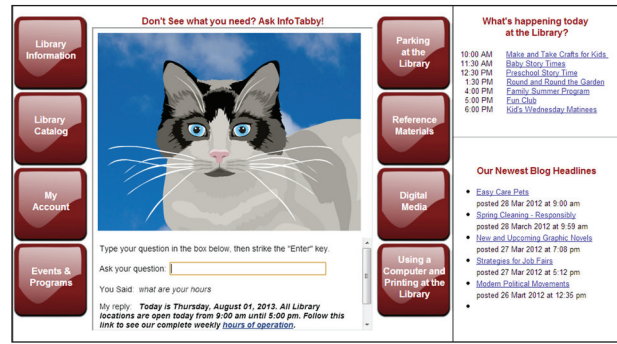
Figure 6.5
Touch-screen information kiosk display with chatbot.

Figure 6.6
Chatbot providing guidance on questions about computer use, accessed via an icon on library computers.

There are a few things to keep in mind if you wish to go this route. First, since CallMom uses bots on the Pandorabots server, an Internet connection is necessary. Also, in order to control a device and to execute other actions, there are additional AIML tags that work only in CallMom. If you modify an existing AIML set, you will need to rewrite certain categories so they'll operate correctly in CallMom. This is not difficult, but it must be done. In general, any categories that pass a search or open a web page will need to be rewritten. Here is an example using some categories that pass a search to a database. In a regular bot, two categories are needed, one in the bot and one in the custom HTML:

In the bot's brain:

```
<category>
<pattern>ARTICLE ON *</pattern>
<template>
```

```
I'm opening a link to The Ohio
   Web Library which contains a
   variety of magazine and journal
   articles to help you. If you
   don't see the results, please
   turn off your pop-up blocker.
<think>
<set name="searcharg"><star/></
   set>
<set name="search">ohweblib</set>
</think>
</template>
</category>
<End Code Sample>
And in the custom HTML:
<Code Sample>
<template>
<condition name="search"
   value="ohweblib">
<script language="JavaScript">var
   myWindow =window.open('http://
   ohioweblibrary.org/?q=<get nam
   e="searcharg"/>&amp;defaultcat
   =All');
</script>
</condition>
<set name="search">nosearch</set>
</template>
<End Code Sample>
The same operation in CallMom
   can be performed with a single
   category and a few additional
   tags:
<Code Sample>
<category>
```

```
<pattern>ARTICLE ON *</pattern>
<template>
<oob><url>http://ohioweblibrary.
   org/?q=<star/>
I'm opening a link to The Ohio
   Web Library which contains a
   variety of magazine and journal
   articles to help you.
</url></oob>
</template>
</category>
```

Description and documentation for the extended tags are available on the page listed in the gray box.

CallMom AIML Tags
https://code.google.com/p/aiml-en-us-pandorabots-callmom/wiki/CallMomOOBTags

Using ChatScript to create an app is an option for the accomplished and ambitious programmer. As noted in chapter 2, ChatScript is a powerful and flexible language and has been used successfully in Android and iOS devices. At this time, there are no apps into which you can simply load a ChatScript bot; you would have to build the app yourself. Those interested in pursuing such a project will find assistance in the Chatbots.org forums and may wish to contact Bruce Wilcox directly.

Chatbots.org Forum Home
www.chatbots.org/ai_zone

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