

Thesis

Chatbots: Development and Applications

Jorin Vogel

Matrikelnummer 545431

Hochschule für Technik und Wirtschaft Berlin
Fachbereich 4 – Informatik, Kommunikation und Wirtschaft
Internationaler Studiengang Medieninformatik
Sommersemester 2017

Erstbetreuer Prof. Dr. Gefei Zhang
Zweitbetreuer Prof. Dr. Carsten Busch

Inhaltsverzeichnis

1	Defintion of the Term Chatbot	2
A	Appendix	4
A.1	Beispielsnippet für eine VWO Integration	5

1 Defintion of the Term Chatbot

Before working on a topic it is necessary to have common definitions of its vocabulary. This section will help aligning previous assumptions.

The term *chatbot* consists of two parts - *chat* and *bot*. The meaning can be better understood after examining the two components separately.

The Oxford dictionary defines **chat** as “an informal conversation” and more specifically as “the online exchange of messages in real time with one or more simultaneous users of a computer network”[?].

As apparent in this definition conversations play a central role in *chats* and therefore *chatbots*. But before examining what characterizes a conversation other noteworthy aspects of this definition are the inherent *informal* format of a *chat*, and the traits of being *online* and *real time*.

Informality doesn't have to be seen as a strict requirement; however a chat message and, for example, a classical letter have different degrees of formality.

Being *online* and thereby not bound to a specific location, device or other physicality can be seen as critical foundation for determining potential types of systems to interact with such media.

The aspect of limiting communication to *real time* gives an important restriction on possible interactions and sets a baseline for the expected user experience. This also excludes the usage of certain technologies that don't allow for the desired responsiveness.

A *conversation* is defined as “a talk, especially an informal one, between two or more people, in which news and ideas are exchanged”[?].

Important here is that there are always at least *two* parties involved in communication and that information is *exchanged*. Keeping that in mind the kind of systems involved in this should always receive and provide information; chatbots can not work with solely unidirectional interaction.

Bot is defined as being “(chiefly in science fiction) a robot” with the specific characteristics of representing “an autonomous program on a network (especially the Internet) which can interact with systems or users, especially one designed to behave like a player in some

1 Defintion of the Term Chatbot

video games”[?],

Foremost this provides the information that *bots*, including *chatbots*, are *programs*. It’s important to internalize that the creation of a chatbot is eventually the creation of an artifact in the form of a computer program.

Furthermore the aspect of *autonomy* and the communication over a *network* can be connected with the previous described trait of a *chat* being *online*. The program is given autonomy by not being bound to any specific device. Building on this allows for different solutions than a scenario where the user is in full control of a programs behavior.

Lastly there is a hint in this definition pointing out that a *bot* can often be seen as a *player* in a *game*. This trend towards game-like mechanisms and the previous mentioned *informality* suggest the utilization of playful interactions.

Concluding from the combination of these definitions a chatbot can be defined as an autonomous computer program that interacts with users or systems online and in real time in the form of, often play-like and informal, conversations.

A Appendix

A.1 Beispielsnippet für eine VWO Integration

Listing A.1: Beispielsnippet für eine VWO Integration

```
1 <!-- Start Visual Website Optimizer Asynchronous Code -->
2 <script type='text/javascript'>
3 var _vwo_code=(function(){
4 var account_id=2842899,
5 settings_tolerance=2000,
6 library_tolerance=2500,
7 use_existing_jquery=false,
8 /* DO NOT EDIT BELOW THIS LINE */
9 f=false,d=document;return{use_existing_jquery:function(){
    return use_existing_jquery;},library_tolerance:function(){
    return library_tolerance;},finish:function(){if(!f){f=true;
    ;var a=d.getElementById('_vis_opt_path_hides');if(a)a.
    parentNode.removeChild(a);}},finished:function(){return f
    ;},load:function(a){var b=d.createElement('script');b.src=
    a;b.type='text/javascript';b.innerText;b.onerror=function()
    {_vwo_code.finish();};d.getElementsByTagName('head')[0].
    appendChild(b);},init:function(){settings_timer=setTimeout
    ('_vwo_code.finish()',settings_tolerance);var a=d.
    createElement('style'),b='body{opacity:0 !important;filter
    :alpha(opacity=0) !important;background:none !important;
    ;}','h=d.getElementsByTagName('head')[0];a.setAttribute('id
    ','_vis_opt_path_hides');a.setAttribute('type','text/css')
    ;if(a.styleSheet)a.styleSheet.cssText=b;else a.appendChild
    (d.createTextNode(b));h.appendChild(a);this.load('//dev.
    visualwebsiteoptimizer.com/j.php?a='+account_id+'&u='+
    encodeURIComponent(d.URL)+'&r='+Math.random());return
    settings_timer;}};})();_vwo_settings_timer=_vwo_code.init
    ();
10 </script>
11 <!-- End Visual Website Optimizer Asynchronous Code -->
```

Erklärung

Hiermit versichere ich, dass ich die vorliegende Arbeit selbstständig verfasst und keine anderen als die angegebenen Quellen und Hilfsmittel benutzt habe, dass alle Stellen der Arbeit, die wörtlich oder sinngemäß aus anderen Quellen übernommen wurden, als solche kenntlich gemacht und dass die Arbeit in gleicher oder ähnlicher Form noch keiner Prüfungsbehörde vorgelegt wurde.

Ort, Datum

Unterschrift