

Acceptance of and Interaction with AI - development and evaluation of an intelligent B2B Chatbot using a software as a service architecture with a recommender system at Krones.

Thema:

Acceptance of and Interaction with AI – development and evaluation of an intelligent B2B Chatbot using a software as a service architecture with a recommender system at Krones

Art:

[MA](#)

BetreuerIn:

[Martin Brockelmann](#)

BearbeiterIn:

Max Müller

ErstgutachterIn:

[Bernd Ludwig](#)

ZweitgutachterIn:

[Christian Wolff](#)

Status:

[abgeschlossen](#)

Stichworte:

[Krones, Chatbot](#)

angelegt:

2019-05-27

Beginn:

2019-05-20

Antrittsvortrag:

2019-10-21

Abschlussvortrag:

2019-11-25

Abgabe:

2019-10-30

Textlizenz:

[Unbekannt](#)

Codelizenz:

[Unbekannt](#)

Hintergrund

In the world of business customer satisfaction is very important. In our busy time it is increasingly difficult to process and answer all requests. Customers want to know everything about any kind of

topic and best of all immediately. In recent years dialogue agents became more popular, because they grew more intelligent in understanding human language and more powerful backed by AI. As most requests come in form of text it is a reasonable conclusion to connect a chatbot with available company information and let them serve customer needs. The chatbot developed in this thesis will be used in the contact form to interact with customers. After understanding the need, it will have two main functions: 1. Give a suitable answer from the source data. 2. If the request cannot be resolved, gather more information about the request and send it to the right person or group. This should increase customer satisfaction through immediate feedback and reduce the workload of employees in distributing the request automatically.

Zielsetzung der Arbeit

This thesis wants to give an overview of the most popular Software as a Service architectures for building virtual dialogue agents. Furthermore, evaluate these platforms to give some valuable insight which platform should be used given this context. At the core a chatbot will be developed using a SaaS architecture for interaction with the customer. All company data must be made available for the chatbot to use. Therefore, former emails will be used to automate the transmission process with the help of machine learning. The answers from employees will be analyzed to feed the chatbot with common questions for information customers often forget to send with the request. Further information like FAQs will be made accessible. To match the customer's information need with the available information a recommender will be developed in the backend, who will rate the answers and interact with the SaaS architecture. In the end the chatbot will be evaluated first by company employees and then by real world customers with focus on the interaction and acceptance.

Konkrete Aufgaben

- Akzeptanz- und Erfolgsfaktoren ermitteln in Vorbereitung auf die Evaluation
- SaaS Architekturen den definierten Kriterien nach betrachten und vergleichen
- Konzerninformationen aufbereiten
- - Model erstellen, wohin Anfragen geleitet werden sollen (Anhand von Emailverläufen)
- - Antworten auf Emails → häufig benötigte Information Klustern
- - FAQs
- - andere
- Recommendersystem entwickeln, welches das Informationsbedürfnis auf die aufbereitete Information abbildet
- Interaktionsdesign erstellen
- Chatbot mit ausgewählter SaaS Architektur umsetzen
- Evaluation mit Fokus auf Akzeptanz und Interaktion

Erwartete Vorkenntnisse

- JavaScript, besonders in Form von Node.js (mit Express.js)
- SQL Management Studio
- Tensor Flow
- SaaS Architekturen wie:
 - * Google DialogFlow
 - * IBM Watson

- * Microsoft Botframework
- * andere

Weiterführende Quellen

- Dirksen, J. K., Schrills, J. N. (2018). Die Bedeutung von Chatbots im Kundenservice : Einsatzmöglichkeiten, Akzeptanz und Erfolgsfaktoren. Shaker.
- McTear, M., Callejas, Z., & Griol, D. (2016). The conversational interface: Talking to smart devices. Springer.
- Moore, R. J., Szymanski, M. H., Arar, R., & Ren, G. J. (Eds.). (2018). Studies in Conversational UX Design. Springer.
- Khan, R., & Das, A. (2018). Build Better Chatbots. Apress.
- Jenkins, M. C., Churchill, R., Cox, S., & Smith, D. (2007, July). Analysis of user interaction with service oriented chatbot systems. In International Conference on Human-Computer Interaction (pp. 76-83). Springer, Berlin, Heidelberg.
- Ciechanowski, L., Przegalinska, A., & Wegner, K. (2017, July). The necessity of new paradigms in measuring human-chatbot interaction. In International Conference on Applied Human Factors and Ergonomics (pp. 205-214). Springer, Cham.
- Biswas, M. (2018). AI and Bot Basics. In Beginning AI Bot Frameworks (pp. 1-23). Apress, Berkeley, CA.
- Wei, C., Yu, Z., & Fong, S. (2018, February). How to build a chatbot: Chatbot framework and its capabilities. In Proceedings of the 2018 10th International Conference on Machine Learning and Computing (pp. 369-373). ACM.
- D'silva, G. M., Thakare, S., More, S., & Kuriakose, J. (2017, February). Real world smart chatbot for customer care using a software as a service (SaaS) architecture. In 2017 International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC) (pp. 658-664). IEEE.
- Wadanka, K. V., Rahul, Y. W., & Taru, U. (2018). Chatbot: An Application of AI. International Journal of Research in Engineering, Science and Management, 1(9), 139-141.
- Yan, R., Song, Y., Zhou, X., & Wu, H. (2016, October). Shall i be your chat companion?: Towards an online human-computer conversation system. In Proceedings of the 25th ACM International on Conference on Information and Knowledge Management (pp. 649-658). ACM.
- Tatai, G., Csordás, A., Kiss, Á., Szaló, A., & Laufer, L. (2003, September). Happy chatbot, happy user. In International Workshop on Intelligent Virtual Agents (pp. 5-12). Springer, Berlin, Heidelberg.

From:

<https://wiki.mi.ur.de/> - **MI Wiki**

Permanent link:

https://wiki.mi.ur.de/arbeiten/chatbot_bei_krones

Last update: **16.09.2020 12:11**

