

IN5480 Group assignment fall 2019

Module 1

a) The group

Our group consists of three members, Kristoffer, Andreas and Karl-Otto that is currently studying Informatics: Design, Use, Interaction first year of our masters degree. Two of our members (Kristoffer and Karl-Otto) have a background in applied computer science from a bachelor at Oslomet and one (Andreas) have a bachelor's degree in Informatics: Design, Use, Interaction.

b) A description of what area of “interaction with AI” you are interested in working with.

We want to look into the ethical side of AI. As AI is gaining a bigger and bigger presence in our society, what kind of ethical dilemmas might occur? Is it a right to know if you are talking to a computer? In the future, how do you trust that anyone is an actual human on social media?

c) Minimum 1 maximum 2 questions that you want to address.

Chatbots and AI assistant is getting more advanced, and in the near future it may be hard to distinguish between humans and computers in some situations. What ethical dilemmas occur when users don't know when they are talking to a computer?

d) A section on what methods you are interested in applying for addressing the question(s).

Literature analysis

Interviews

Practical challenges/tests

e) Possible literature

Bostrom, N., & Yudkowsky, E. (2014). The ethics of artificial intelligence. In K. Frankish & W. M. Ramsey (Eds.), *The Cambridge Handbook of Artificial Intelligence* (pp. 316–334).

<https://doi.org/10.1017/CBO9781139046855.020>

Howard Williams (2019) The rise of 'eception' and the ethical issues arising from humanising AI in customer experience

<https://www.marketingtechnews.net/news/2019/may/10/rise-eception-and-ethical-issues-arising-humanising-ai-customer-experience/>

Nate Swanner (2018) Google Duplex Can Make Calls, But Won't Answer Ethical Questions

<https://insights.dice.com/2018/06/28/google-duplex-ethical-questions-linger/>

Blay Whitby (2014) The Ethical Implications of Non-human Agency in Health Care

<http://doc.gold.ac.uk/aisb50/AISB50-S17/AISB50-S17-Whitby-Paper.pdf>

Module 2

Background

Human-AI interaction have for several years been a big topic in the IT industry and there has been a lot of papers written about the subject. This section will touch upon the question we asked in module 1:

“Chatbots and AI assistant is getting more advanced, and in the near future it may be hard to distinguish between humans and computers in some situations. What ethical dilemmas occur when users don’t know when they are talking to a computer?”

Below we take a look at the ethical dilemmas that might occur when you have AI that tries to act as human as possible and the users expectations of the system as the lines between human and AI becomes more and more blurred.

Expectations

A problem that is occurring within the topic of AI and AI-infused systems is the correlation between the expectations of the user and the capabilities of the AI. As concluded by Luger, E., & Sellen, A. (2016):

“Overall, in the majority of instances, the operation of the CA systems failed to bridge the gap between user expectations and system operation”.

But what will happen to the users expectations if the user no longer can distinguish between an actual human and a Conversational Agent(CA)? Yusuf Olalere (2019) touch upon this subject in his article “Chatbots: Humanlike or Fake Humans?”. He mentions different CA systems that pretend to be as human as possible like Siri or Google assistant. The problem with this is that the users then start to expect the CA to do things and answer random questions like a real human would do and the system quickly breaks down because it can’t meet these expectations. This arise the ethical question, if it is right or wrong to give users false expectations of the CA. You can say it works as a form of false advertisement for the

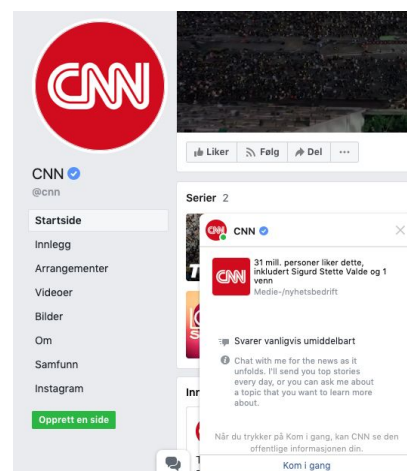
system. You can clearly see a deviation from the design guidelines G1(Make clear what the system can do) and G2 (Make clear how well the system can do what it can do) presented in “Guidelines for Human-AI interaction” by Amershi (2019)

Practice

Among the pages for different large companies on Facebook, such as booking.com, CNN and Domino's pizza there is a growing trend to add chatbots via a third party plugins. The reasoning behind this is to give users the ability to get answers to frequently asked questions and handle other recurring tasks that previously only real humans had to deal with. Thereby the people in the customer service department of the company can focus more on other, more demanding inquiries.

You can easily argue that this is an advantage to both customers/users and the product owners. Customers get immediate help and the company has to use less labour to help them. The issue of ethics arise when the chatbots don't identify themselves as what they are, in fact chatbots.

To be fair there are not too many instances, that we could find, where the assistant neglect to tell the user that they are talking to a bot/computer. An example is CNN, where the bot introduces it self like this - “Chat with *me* for the news as it unfolds. *I'll* send you top stories every day, or you can ask *me* about a topic that you want to learn more about.”



There is no point in the interaction where the bot identifies itself as one, and the inexperienced customers that have little-to-none background with talking to assistants does not necessarily realize it. The issue of ethics is not terribly present when it comes to chatting about news with CNN, but if this was a company that handled more sensitive information it could have a more serious impact.

Findings

During this project we started to see if the chats we encountered on facebook and websites had any disclaimer if you talked to a bot or humans. Most companies have a clear disclaimer or make it clear in other ways that you are talking to a bot. Most often with silly names like “Helper Bot” or “Nova – Nordeas Virtuelle Agent”. This makes it less likely that users think they are talking to “real” customer support.

One of the maybe more nominal ways to “hide” AI in applications as customer support, is by not letting the bots talk directly to the customers. Botmid, provider of customer support automation, states that you should not tell your customers they are talking to a bot. and instead: “...plug the chatbot on a chat interface with agents on the other side and then involve the chatbot only when the latter is 100% sure to understand the customer’s request”. (Christophe Chevalier, 2018)

We also encountered a few websites that connect you to a real human after you state why you are contacting the company. This is probably just a way to make you explain your problem before they set you through to a human, and that way save the time of the support staff. But you don't need a lot of imagination to see how companies can use this information to optimize the customer support by sending you to the right expert immediately.

We have had few short informal interviews to probe how non-IT-students think about the ethical dilemmas with hidden or indistinguishable conversational agents. And our finding this far, is that most people haven't made any opinions on this matter yet. Mostly because they don't believe conversational agents are at the point where it's possible to confuse them with humans. If anything, they are more concerned with humans listening or reading their conversations that they know are with a bot. For this reason we don't think interview as method is a good way to do data collection forwards.

References

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<https://medium.com/datadriveninvestor/chatbots-humanlike-or-fake-humans-3b743d148404>
- The code of ethics for AI and chatbots that every brand should follow. (2017, October 15). Retrieved October 23, 2019, from Watson website:
<https://www.ibm.com/blogs/watson/2017/10/the-code-of-ethics-for-ai-and-chatbots-that-every-brand-should-follow/>

Appendix 1: Chatbot design task

For module two, we had an assignment where we made a prototype of a chat bot. This was not an assignment stretching over weeks, but just a small weekly task. Our understanding of the task was that it should make us understand some of the challenges in making a chatbot.

To save time, and remove many of the difficult technical challenges in making a chatbot, we used chatfuel. Chatfuel is a platform that specialises in facebook-chatbots, and makes it real easy to make a simple bot connected to a facebook page.

For inspiration we listed up bots that we would find cool or useful. A bot who recommends movies was proposed, and we discussed if it was possible to make a bot keep track of your calendar. Both of which was deemed out of the scope of the assignment. The idea we liked the most, and that was possible within the scope of the assignment, was a bot who recommends what to have for dinner today.

To make the bot easier to program, we did not allow any free-text input, only predefined phrases. We also limited the scope of the bot to meal 2 categories with 3 recipes each. The bot would ask the user about what kind of food they wanted (eg. healthy) and then serve a random recipe from matprat.no that we already had programmed in to the bot. The bot would also answers with the ingredients and procedure of the recipe.

Out of this assignment we realised how much data and edge cases taken into account in a useful chatbot. the basics are very easy, but requires lots of hard work. What we make do not really use AI, it's more of an auto answer bot. To improve on this we could program in more phrases or focus more on making the conversation more fluid.

Appendix 2: Deep learning experiment - Movie-line chatbot

The second task for module 2 was to learn more about deep learning. How does a chatbot that works with this technology act, how is it built up and last but not least which parts of the code is changing the different aspects of the bot?

Our main task was to alter the code in a movie chatbot to learn about how changes in the code affects the bot. The main objective was changing parts of the model in the python code and see how it alters the bot. We were encouraged to add our own model where we had more or fewer layers, different dropout and maybe even different input text.

When performing the task we had some issues actually seeing how the changes we made affected the bot, and which part of the model we should focus on. We did some research on the framework tensorflow & keras, and looked at the documentation and got some ideas from that.

Meeting the other groups in class the following thursday definitely gave us a clearer view about how the changes in the layers and model altered the speed, efficiency, precision and quality of the bot.

In retrospect we could certainly asked more questions to the lecturer which would have given us a clearer view on the aspects of the model we had the assignment of changing. Our group had little-to-none experience with coding in python which maybe halted our progress slightly.