

APPLICATION SCENARIOS FOR AI

Information butler for the office

Starting point

Intelligent virtual assistants that can answer straightforward questions or carry out simple instructions are already to be found in smartphones, tablets and millions of households. As yet, however, these systems are not capable of mastering the complex daily work involved in journalism, administration or consulting, for example, as they still cannot process huge volumes of information, handle different subjects, sources and means of communication or contact a variety of different people. In a few years, self-learning assistance systems that are intuitive to use will support knowledge workers in their everyday tasks.

Application scenario

Hannah Jakobs is a corporate consultant, and is on her way to an important customer meeting. During the train ride, she puts the finishing touches to her presentation. To enable her to work with as few interruptions as possible, she has told her information butler to only put through urgent messages. This happens when her assistance system notifies her of a new cost assessment for the meeting, which Hannah's co-worker has just sent. The butler has already prepared the cost assessment for Hannah in such a way that she can get the gist of the content more quickly. Looking at the list of participants, she doubts whether the most recently added attendees will have sufficient background knowledge. She asks her information butler, which provides all the relevant information about the participants, leading Hannah to add two vivid illustrations that she finds with the help of her butler and an interactive search.

Self-learning systems control the process

Information butlers help people in all kinds of ways. For example, a butler can research information from a range of different sources and applications, connect it all together, assess the relevance of multimedia content to a specific context and then proactively present the results to the user. In Hannah's case, her information butler scans her own directories and documents, plus company databases, for information about the meeting and the subjects it will cover. Furthermore, the butler is able to grasp the importance of the incoming email – even though the message from her colleague also contains lots of information that isn't relevant to the current situation – and forwards it to Hannah.

Tailored information

The information butler prepares the information it has found in a way suited to the current situation and adapts it to Hannah's existing knowledge. When Hannah asks her butler about the background knowledge of the participants, it presents her with an easy-to-follow diagram that includes each attendee's respective organisation and previous encounters. This shows Hannah that, for the first time, two participants will be from unrelated specialist departments, so she adds explanatory examples to her presentation.

Learning from people

As a self-learning system, the information butler is able to adapt to someone's habits and preferences and assess information based on the context. By accessing the calendar, contacts, local file system or team drives and also through the daily interaction with its user, the butler builds up a mental model of his human. For example, it learns which subjects are of interest to Hannah in certain situations and for which tasks Hannah might need tips from the company, and can therefore provide suitable information unprompted. Ultimately, however, it is the human who decides which conclusions to draw from the information and checks the actions of the information butler.

Benefits

As customised digital service providers, information butlers have a number of benefits:

- **Support:** Information butlers take over annoying routine tasks, reduce the flow of information and offer information tailored precisely to specific situations.
- **Quality and efficiency:** Knowledge workers have more time for their core tasks. Quality and productivity increase.
- **Collective intelligence:** When several butlers cooperate, this boosts the collective intelligence of an organisation.

Challenges

The following questions need to be addressed before information butlers can help people with their everyday work:

- **Secure data management:** How can the quality of information be safeguarded while also protecting personal data? What data is the information butler permitted to use? Whom does the butler's knowledge belong to?
- **Autonomy:** How can it be ensured that the ultimate decision-making authority remains with humans? How can misuse – such as unauthorised performance checks by employers – be prevented?
- **Good working conditions:** What should the collaboration between human and butler look like?

What needs to be done?

The following steps need to be taken to ensure this application scenario can become a reality in a few years:

- Further research and development work on various AI technologies, for example on information butlers' transparency and ability to explain
- Clarification of organisational and legal frameworks
- Creating an empathetic and trusting division of labour between human and machine

The application scenario "Information butler" has been developed by the Future of Work and Human-Machine Interaction Working Group of Plattform Lernende Systeme. You can find out more at: www.plattform-lernende-systeme.de



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