

What are AI Digital Assistants?

AI Digital Assistants have emerged over the last decade and are now commonplace, embedded in the devices we use at home and work every day – computers, smartphones and televisions and smart speakers. They can be activated by voice or text query, and use artificial intelligence (AI) to understand natural language, determine intent and provide a response or complete a specified task based on your commands. They simulate human conversation to provide an easy and convenient way to obtain information or interact with applications.

The most frequent uses are for education, games, news, home device control, travel information and shopping. AI Digital Assistants can make phone calls, check and send messages or emails, answer questions, search the web for information, find recipes, order a take-away, check the weather forecast, stream music or TV programmes, set alarms and reminders or launch and interact with other applications on a device.

Popular AI Digital Assistants include Siri (From Apple), Alexa (from Amazon), and Google Assistant. Cortana is Microsoft's AI Digital Assistant, used on Windows devices, and Bixby is to be found on Samsung mobile phones.

What are the pros and cons of using AI Digital Assistants?

They can be useful for mundane tasks and are helpful to those with disabilities, such as visual impairment. The conversational experience is one which many users find more natural and enjoyable.

The words spoken in a conversation are only part of the way we typically communicate, so AI Digital Assistants don't have the visual cues from body language and facial expression and can struggle to interpret what we convey through the pitch and tone of our voices.

Privacy and ethical questions have been raised about the way in which AI Digital Assistants operate. There has been evidence that a significant number of users have abusive conversations with their AI Digital Assistant. Female voices predominate although in recent years tech companies have introduced more options for users.

Because devices can be listening all the time it is possible for different people (including children) to be recorded and interact with a AI Digital Assistant, even when the account linked to the assistant belongs to another person. Such transactions might mean unauthorised users could access information such as messages not intended for them. Interactions by other users may be recorded and stored against the owner's account.

Are AI Digital Assistants accurate?

There are two dimensions to accuracy – how well the query or request and intent are understood, and the quality of the response given. Some perform better than others, but accuracy improves over time as your assistant learns and improves. The quality of response is also determined by content which might be accessed from web search or from third-party content creators.

Research studies have attempted to judge accuracy, and this typically involves assigning points to each response based upon a rubric. The rubric might include such factors as author expertise, quality of sources cited and accuracy of the answer provided, attribution, disclosure and currency.

Content can be created by anyone for use with AI Digital Assistants. On Alexa such third-party developed applications are called “skills”, while Google has “actions” and on Siri there are “shortcuts”, which allow apps on Apple devices to be configured so they can be accessed and used with Siri’s voice commands. Globally there are hundreds of thousands of third-party applications.

The quality of information on third party applications is highly variable. It isn’t always easy to discover what might be available. There is declining interest from developers and tech providers are looking more to in-house development.

Some AI Digital Assistants allow users to ask what was heard or recorded, or why it responded the way it did. Users can also check transaction history to see how accurate text translation of voice recordings were.

Are AI Digital Assistants recording everything?

When active, AI Digital Assistants are constantly listening for their trigger phrase. This can be customised by the user, but the default would be phrases such as “Hey Siri”, “OK Google”, or “Alexa”. Smart phones and smart TVs can also record conversations if knowingly or accidentally triggered.

When activated some devices light up or make a sound to indicate they are recording.

When a device detects what it thinks is the trigger phrase it records and stores the spoken words, uses natural language processing to sort them into structured data and uses matching algorithms to determine user intent and generate natural language responses. Sometimes devices are activated mistakenly, by words which sound similar to the trigger phrase, or by users accidentally launching the assistant manually – for example where a device has a button to activate the AI Digital Assistant in this way.

AI Digital Assistants get trained through usage, and part of this process can include human translators listening to recordings to check and improve accuracy. Providers claim this is a very small proportion of recordings. There have been some reported incidents of these translators, often third-party contractors misusing or leaking recordings.

What control do users have over privacy when using AI Digital Assistants?

AI Digital Assistants can be switched off, muted or disabled on devices, but commonly users leave them on all the time, and may forget that when their smartphone is switched on it may be listening.

Interaction and transactions with AI Digital Assistants are stored, although users may have some control over storage and deletion of recordings. It may be possible to prevent storage of recording altogether but this impacts on the functionality of an AI Digital Assistant which is designed to learn over time, so providers would argue this can reduce the personalisation and accuracy of responses.

Users should check the privacy controls and configure these to suit their preferences. In some cases AI Digital Assistants can be trained to recognise different voices, which may be helpful where there are multiple people in a household. There may also be family-friendly settings to prevent children accessing certain content and features.

Could AI Digital Assistants be helpful to career development?

There are already some career and employment related skills, actions and shortcuts available. Organisations and Institutions can develop their own resources and make them available to their users.

Some potential uses could be for transactions, such as checking service availability, providing tips and bite-sized learning, booking advice and guidance sessions, job search, accessing labour market intelligence, skills development, and using career development tools.

AI Digital Assistants can be a useful tool but are not always a satisfactory alternative to careers information advice and guidance delivered by someone who is qualified to do so.

What are the implications for careers practitioners?

In physical environments it should be assumed AI Digital Assistants are active and listening, unless all devices are switched off, muted or disabled.

Practitioners should be aware of the privacy controls and settings of their own devices and follow any guidance or policies from the institutions or organisations they work with.

In their work practitioners can identify potential uses of AI Digital Assistants and demonstrate to those they work with as well as sharing good practice with other professionals.

There is scope for development of specialised career development applications that can accessed through AI Digital Assistants, with design input from Practitioners and service users.

Useful resources

For a directory of Alexa skills search for “Alexa skills” on <https://amazon.co.uk>

For Alexa privacy information – <https://www.amazon.co.uk/alexaprivacysettings>

For a directory of Google Assistant actions visit <https://assistant.google.com/explore>

Google Assistant privacy information: https://safety.google/intl/en_us/assistant/

For Apple privacy information visit <https://www.apple.com/uk/privacy/control/>

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