Privacy & Identity: in the age of AI

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Recap on AI

• Alan Turing (1948): Learning of languages one of the most impressive of human feats

• Turing (1950): Imitation Game to test intellectual capacity of machines through question-answer indistinguishability
Turing’s test for machine intelligence
Recap on AI

• **Alan Turing** (1948): Learning of languages one of the most impressive of human feats

• Turing (1950): Imitation Game to test intellectual capacity of machines through indistinguishability

• Christopher Strachey (1952) computer programme generates *love letters* on Ferranti ‘baby’ computer at Manchester University

• **John McCarthy** coined AI in 1955 - field emerged from a scientific gathering in 1956 at the Dartmouth Conference
1966: Machines begin to talk: Joseph Weizenbaum’s natural language understanding programme, *Eliza*, allows humans to interact with a computer through text-based questions and answers:
Digital Assistants

• 2005: IKEA’s *Anna* 24/7 virtual assistant augmenting keyword search:
  • *Decreased call centre costs*
  • *Increased sales* of IKEA products from its online catalogue

Shah & Pavlika, 2005: ‘*Text-based Dialogical E-query Systems: Gimmick or Convenience?*’
2008: in Reading University Turing test experiment, chatbot *Eugene Goostman* amused, surprised and remembered -one Judge reported:

“The importance of Eugene correctly answering the question (My car is red. What color is my car?) and then remembering its answer when later asked cannot be understated. That is a GREAT achievement”. (in Shah & Warwick, 2010)
• 2011: General Knowledge: Watson machine outsmarts two human Final Jeopardy! US TV show champions in IBM machine vs. human general knowledge test

• 2011: Apple’s Siri voice assistant launched on iPhone
Digital Assistants: 2017

Google Home

Amazon Echo Dot – blue ring signals Alexa digital assistant is alert awaiting question.
Google Home vs. Amazon Alexa

- International digital marketing agency 360i (clients include Coca Cola) study using proprietary software to ask Google Home and Amazon Alexa 3,000 questions:
  - Google’s digital assistant “six times more likely to answer your question than Alexa”
  - “AI-based devices are going to completely alter the marketing landscape.”
- Language-speech understanding crucial to hands-free, voice activated AI applications
Warning for Privacy & Identity

• Elizabeth Denham, Information Commissioner’s Office (ICO)
  • “….my office has announced that the Royal Free NHS Foundation Trust did not comply with the Data Protection Act when it turned over the sensitive medical data of around 1.6 million *patients to Google DeepMind, a private sector firm, as part of a clinical safety initiative. As a result of our investigation, the [NHS] Trust has been asked to sign an undertaking committing it to changes to ensure it is acting in accordance with the law…….” (3 July 2017)

[*identifiable]

Privacy and Digital Assistants

• Convenience vs revelation of conversational habits
• It is not paranoid to unplug your digital assistants when not in use. Unless you’re happy for Google, Amazon and others to acquire all your home conversations, and misunderstand TV voices as commands/requests for information!
References

• A.M. Turing. 1950. **Computing Machinery and Intelligence.** *Mind*, Vol. 59 (236), pp. 433-460


• Shah, H. 2011. **Deception-Detection and Machine Intelligence in Practical Turing tests.** PhD thesis. Reading University. Accessible from: Academia.edu and ResearchGate


• Shah, H. & Pavlika, V. 2005. **Text-based Dialogical E-Query Systems: Gimmick or Convenience?** *Proceedings of the 10th international conference on Speech and Computers (SPECOM)*, University of Patras, Greece, 17-19 October
Thank you for listening

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