How to involve Citizen Scientists to develop AI for Knowledge Exchange

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SLI.DO  *Take Part* Code: OAI11

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- Enter the event code OAI11
- Join the conversation by
  - Answering a question (see next slide)
  - Raise a question
Contents

- Audience activity – please use SLI.DO to record your response to a question
- Artificial Intelligence in our lives
- How citizen scientists benefit the work of AI scientists
- What more needs to be, and can be done
Citizen scientists should be included in the discussion on the future of jobs in a world of increasing automation, robots doing human jobs, and in developing AI applications for knowledge search and exchange.
Question......
**Question:**
Is Entity* response from a Human [M/F] or Machine?

<table>
<thead>
<tr>
<th>Human Turing test Interrogator: question</th>
<th>all birthdays are special. name three items of clothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hidden Entity*: response</td>
<td>Frank, James and Betty</td>
</tr>
</tbody>
</table>
AI in our lives.....

Google Home with Assistant – listens to prompt
*Hey Google* or
*Okay Google*

Amazon Spot device with Alexa assistant
Arising from Turing test

- Based on Alan Turing’s scholarship (1936-1954), two different practical versions of his test / imitation game: a three-participant game and a two-participant game.

Simultaneous comparison test

Viva voce: one-to-one test
NB first part of the book is based on my PhD

*Deception-detection and machine intelligence in practical Turing tests*. PDF shared on Academia.edu & ResearchGate
Citizen Scientists benefitting scientists’ work
2008 Reading University: 18th Loebner Prize

- Designed, organised and conducted free-to-attend public Turing test experiments - including the 18th Loebner Prize for AI, with members of the public (Turing’s average interrogators) acting as judges, and foils for the machines.

Reading University, 2008: https://www.reading.ac.uk/15/research/ResearchReviewonline/featuresnews/res-featureloebner.aspx
Turing100 in 2012 at Bletchley Park

- Designed, organised and conducted another public Turing test experiment:
  - Bletchley Park, 2012 – location of WWII codebreaking:
    http://www.reading.ac.uk/news-and-events/releases/PR445524.aspx
Turing 2014 at The Royal Society London

- Designed, organised and conducted third public Turing test experiment:
  - The Royal Society London, 2014- judge room
Judge categorising hidden interlocutors
Turing2014 blog

- Participants contribute their experiences to Turing test blogs:
  https://www.youtube.com/watch?v=zgqetyY-_5U&feature=youtu.be
Current work: Trust in AI
Current research: Trust issues in *Conversational AI*

- Lots of data collected through conversational AI:
  - What questions you ask
  - How you ask questions
  - When you ask questions
  - Where you ask questions (where the device is located when used)
  - They *know who you are*
Trust issues: Privacy, Security, Consent and Data Protection

- General data protection regulations (GDPR): Consent means offering individuals real choice and control
  - Right to withdraw
  - Right to be forgotten.

- “Genuine consent should put individuals in charge, build trust and engagement, and enhance your reputation”.

More from ICO:

OAI11 UniGe Workshop 21 June 2019
Recruit citizen scientists to use their digital assistants, *Siri, Alexa, Google Home, Bixby, Cortana* to ‘find knowledge in research papers’:

- “Alexa: in which of Turing’s works did he say ‘intelligence is an emotional rather than a mathematical concept’?”
Recruit citizen scientists to develop question-answer systems — chatbots to search for specific knowledge. For example, develop a chatbot that can answer FAQs about all the papers ever published on climate science.
This is a funding issue, but a worthy AI / natural language engineering challenge

*Eugene Goostman chatbot* successful in providing humanlike responses in 18th Loebner Prize for AI, in Turing100 & in Turing2014
AI Ethics and billionaire donors

- "The head of private equity firm Blackstone, Stephen Schwarzman, has pledged 150 million pounds ($188.37 million) to Oxford University, the biggest single donation in its history, to fund a center for humanities that would also house an institute to study the ethics of artificial intelligence." (Reuters, 19 June 2019: https://www.reuters.com/article/us-blackstone-group-oxford-donation/blackstone-chief-donates-150-million-to-oxford-university-idUSKCN1TJ30B)

- Stephen Schwarzman’s “….donation to Oxford was “complementary” to his $350m contribution last year to the Schwarzman college of computing at the Massachusetts Institute of Technology, which he considered the best AI research centre.” (FT: https://www.ft.com/content/b0d0bc42-91da-11e9-b7ea-60e35e678d2)
Schwarzman’s “gift reflects growing concern over the implications of AI, from cyberbullying to the consequences for jobs”

“It is clear we need to develop a robust discussion on which technologies we can implement, how fast, and when,” said Mr Schwarzman. “It has to be done in a very smart and very balanced way.” (Schwarzman quoted in FT: [link](https://www.ft.com/content/b0d0bc42-91da-11e9-b7ea-60e35ef678d2))

What about the general public’s concerns about where, how and why AI is being developed?
Citizen Science and Artificial Intelligence

- The importance of artificial intelligence (AI) being democratised so that citizen scientists are informally educated and recognised through their knowledge creation and exchange.

- EU SwafS citizen science calls are appropriate for citizen science engagement in AI research – not to test algorithms, but to engage in ensuring ethical development of AI applications and to co-develop the future.
Back to Human or machine question

OAI11 - UniGe Workshop 21 June 2019
**EXCHANGE from actual Turing test:**

Interrogator is human

<table>
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<tr>
<th>Interrogator:</th>
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<td><strong>Entity: is human</strong></td>
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Professor Kevin Warwick (first human cyborg) acting as hidden human at Bletchley Park Turing test event in 2012, bored with the judge’s questions
Our accolades

- University of the Year for Student Experience
  The Times and Sunday Times Good University Guide 2019

- 2nd for Teaching Excellence
  Times Higher Education UK (TEF) metrics ranking 2017 – Gold winner

- 5th UK Student City
  QS Best Student Cities Index 2018

- 13th in Guardian University Guide 2019
  of 121 UK institutions ranked
Our accolades

- Highest ranking modern university for 7 years running
  The Guardian University Guide 2013-2019

- 1st for Overseas Student Experiences
  based on student trips abroad – HESA 2014/15, 2015/6 and 2016/17, published 2018

- 97% of graduates employed or in further study
  Six months after graduating - DLHE UG UK survey 2016/17, published 2018

- Queen’s Award for Enterprise
  International Trade 2015
Thank you for listening