University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

February 13th, 2024

Opening Statement on "Engagement on the protection of children in the use of Artificial Intelligence" to the Oireachtas Joint Committee on Children, Equality, Disability, Integration, and Youth.

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Introduction

I am honoured to come here as a witness to the Committee today. I am a full professor at the School of Computer Science & IT[1] at University College Cork, and have worked in the field of artificial intelligence for over 25 years. I am founding director of the Insight Science Foundation Ireland Research Centre[2] for Data Analytics at UCC and the Science Foundation Ireland Centre for Research Training in Artificial Intelligence.[3] I served as Vice Chair of the European Commissions High-Level Expert Group on Artificial Intelligence which formulated the EU's ethical approach to AI.[4] I currently represent the European Union at the Global Partnership on Artificial Intelligence.[5] I am a Fellow and a past President of the European Artificial Intelligence Association[6] and a Fellow of the Association for the Advancement of Artificial Intelligence,[7] as well as a member of the Royal Irish Academy.[8] I hold a number of Ministerial appointments including chair of the National Research Ethics Committee for Medical Devices[9] and membership of the Government's AI Advisory Council.[10] In 2016, I was recognised as Science Foundation Ireland Researcher of the Year and I've also received the SFI Best International Engagement Award in 2021. In 2023 I was the first Irish person to receive the European AI Association's Distinguished Service Award.[11] In addition to my academic work, I contribute to several global Track II diplomacy efforts and related activities

[1] https://www.ucc.ie/en/compsci/
[2] http://www.insight-centre.org
[3] https://www.crt-ai.ie
[4] https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai
[5] https://www.gpai.ai
[6] https://www.eurai.org
[7] https://www.aaai.org
[8] https://www.ria.ie
[9] https://www.nrecoffice.ie/committees/nrec-md/
[10] https://www.gov.ie/en/press-release/90b83-artificial-intelligence-advisory-council-will-provide-
[11] https://eurai.org/award/barry-o-sullivan

at the interface of military, defence, intelligence, and the geopolitics of AI. For example, I am Senior Technology Advisor to INHR (Geneva, New York, and Washington DC),[12] I serve on the AI Governance Forum at the Centre for New American Security (Washington DC),[13] and I am one of three Polymath Fellows at the Geneva Centre for Security Policy.[14]

Key Points:

1. The term "artificial intelligence" was coined in 1955 by John McCarthy, Marvin Minsky, and others, when they proposed the Dartmouth Summer Research Project on Artificial Intelligence which subsequently took place in 1956. The field is challenging to precisely define but is essentially the study of methods and systems that perform tasks that are normally associated with requiring human intelligence. These include, for example, the ability to learn, reason, plan, understand language, vision, etc. Much recent interest in AI has been as a result of the success of a subfield of AI called machine learning, and specifically the success of "deep learning", a sub-field of machine learning. The general public has become very aware of specific recent success stories in AI through systems such as ChatGPT, one of many "large language models". LLMs are one of many forms of "Generative AI", which are a set of AI systems that can generate text, images, audio, video, etc. in response to prompts or requests. Despite the hype, while the field of AI has made progress over the last decade or so, major obstacles still exist to building systems that really compete with the capabilities of humans.

2. Over the past decade there has been considerable focus on the governance and oversight of AI systems. For example, as part of our work at the European Commission's High-Level Expert Group on AI, we developed the EU's approach to Trustworthy AI, built on a set of strong ethical principles.[15] We also proposed a risk-based approach to the regulation of AI. Over the past few weeks the European Union has finalised the EU's AI Act which will govern AI systems deployed in the European Union. The Act builds strongly upon our work at the HLEG-AI. There are specific considerations in relation to the protection of children in the AI Act including some specific use-cases that will be prohibited in the EU.

3. I had the pleasure of participating in the National Youth Assembly on AI in October 2022 which was hosted by the Department of Children, Equality, Disability, Integration and Youth (DCEDIY) and the Department of Enterprise, Trade and Employment (DETE) in partnership with the National Participation Office.[16] The Assembly brought together a diverse group of 41 young people, aged 12-24 years from across the country. At National Youth Assembly on AI delegates considered the issues affecting young people and provided a set of recommendations to Minister for State Dara Calleary and the Department of Enterprise, Trade and Employment (DETE) on the Government's policy on Artificial Intelligence. A key objective of the Assembly was to "discuss the role, impact and understanding of AI in the lives of children and young people, and their

[12] https://inhr.org
[13] https://www.cnas.org/cnas-ai-governance-forum
[14] https://www.gcsp.ch/the-polymath-initiative
[15] https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai
[16] https://www.gov.ie/en/campaigns/da956-national-youth-assembly-on-artificial-intelligence-ai-2022

opinions, thoughts and possible fears in relation to the technology and its potential." Recommendations, available at the web-site cited as Footnote 16, were presented along four dimensions:

(a) AI and Society;

(b) Governance and Trust;

(c) AI Serving the public;

(d) AI Education, Skills and Talent.

A poster version of the recommendations is also available.[17]

4. Children encounter AI systems every day if they are working online, using smart devices, or gaming, to mention a few modalities. For example, the content they are presented with on their social media accounts is been recommended to them using AI technology known as a recommender system. The movies suggested to them on Netflix and other platforms is also curated using AI methods. Smartphones are packed with many AI systems, for example, image editting, image filters, video production, facial recognition, and voice assistant technology. The technology itself it not problematic, but it is powerful, and can, therefore, be abused in ways that can be extremely impactful. Combined with the power of social media, the combination can be devastating, given the reach that is possible.

5. Children can also encounter AI-generated content online. This can range from harmless memes to more sinister uses of deep-fake technology. A deep-fake is essentially a piece of content, often generated using AI methods, that does not correspond to something real and may be generated for nefarious purposes. For example, "nudify" apps are become readily available which generate fake – but often impossible to recognise as so – images of people in the nude.[18] Technology to create pornographic videos from input images of a third party are also possible and are amongst the most concerning and harmful uses of AI technology. It is also possible to encounter fake content designed to create "hallucination" such as believing an online profile belongs to a person known to the user, or someone they might be comfortable interacting with.

6. UNICEF issued their "Policy Guidance on AI for Children" (2021).[19] Building upon the Convention on the Rights of the Child, this guidance proposed nine requirements for child-centred AI:

(a) Support childrens development and well-being;

(b) Ensure inclusion of and for children;

(c) Prioritize fairness and non-discrimination for children;

(d) Protect childrens data and privacy;

(e) Ensure safety for children;

[17] https://assets.gov.ie/249727/3877fce3-5cb3-4480-b82c-0cbc8c1532c7.pdf

[18] https://time.com/6344068/nudify-apps-undress-photos-women-artificial-intelligence/

[19] https://www.unicef.org/globalinsight/reports/policy-guidance-ai-children

(f) Provide transparency, explainability, and accountability for children;

(g) Empower governments and businesses with knowledge of AI and childrens rights;

(h) Prepare children for present and future developments in AI;

(i) Create an enabling environment.

7. Educating children, parents, guardians, and wider society on the responsible use of AI and how AI might be encounter is key. I chaired a committee for the Expert Group for Future Skills Needs focused on AI skills which we published in May 2022.[20] Our report assesses the skills that are required by a variety of personas in relation to AI and how skills development initiatives could be delivered.

8. At UCC we host a free online course called the Elements of AI which teaches the basis of AI to anyone interested in the topic. [21] It is our aim to educate at least 1% of the Irish population on the basics of AI. Both an English- and Irish-language version of the course are available.

9. There are many educational benefits to AI. Personalised learning experiences can help students achieve higher grades and competence. AI technology can be used to search for additional relevant material and search through vast sources of information. We often don't regard the Google search engine as an AI system, but it very much is one. However, AI technology also has the potential to undermine the integrity of assesssment processes. For example, it is becoming trivial to use AI to produce content that can be submitted as part of an assessment at school or university. Dealing with these issues can be challenging.

10. While not an instance of children using AI, it is important to note that AI is also widely used to protect children. For example, there are many systems that filter out harmful content before it reaches children, e.g. there are several AI-enabled content moderation platforms available.[22] AI systems are also used in the detection of child-sex abuse material (CSAM) online; I previously chaired an advisory board for a project on this topic at the invitation of Europol. The GRACE - Global Response Against Child Exploitation - project aimed "to equip European law enforcement agencies with advanced analytical and investigative capabilities to respond to the spread of online child sexual exploitation material."[23]

[20] https://www.skillsireland.ie/all-publications/2022/ai-skills-report.html
[21] http://elementsofai.com/ie/
[22] https://www.activefence.com
[23] https://www.grace-fct.eu