AI for Good: Using AI to Prevent Modern Slavery, Human Trafficking and Forced and Child Labour

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In February 2019, Delta 8.7, The Alan Turing Institute, the Computing Community Consortium (CCC), Tech Against Trafficking, the University of Nottingham Rights Lab and the Global Security Initiative at Arizona State University convened the inaugural Code 8.7 meeting. The conference was conceived as a means to explore how computational science and artificial intelligence can be used to achieve Target 8.7 of the United Nations Sustainable Development Goals. Over the course of two days, a number of experts came together at the United Nations headquarters in New York to discuss how AI, computational science and machine learning tools were being used in the fight against modern slavery, human trafficking, and forced and child labour, and how they can be further mobilized.

The Code 8.7 organizing committee that emerged from these conversations has developed collaborative projects and a shared research agenda in the past 18 months. On 24 February 2021, the AI for Good Summit convened the following Code 8.7 representatives to discuss some of the challenges and opportunities presented by the use of AI to achieve SDG Target 8.7:

- **Nadya Bliss**, Executive Director, Global Security Initiative at Arizona State University
- **Doreen Boyd**, Professor of Earth Observation, Faculty of Social Sciences at University of Nottingham
- **Alice Eckstein**, Programme Manager, Modern Slavery Programme at United Nations University Centre for Policy Research
- **James Goulding**, Deputy Director N/LAB, Faculty of Social Sciences at University of Nottingham
- **Anjali Mazumder**, Thematic Lead on AI, Justice and Human Rights at The Alan Turing Institute

The full webinar can be viewed on AI for Good's YouTube channel here.

One ongoing project was developed in a workshop organized in March 2020 by CCC and Code 8.7. Workshop participants identified four critical areas for the application of AI to combat modern slavery:

1. Networks aimed at identifying hidden populations targeted for exploitation, and earlier detection of trafficking when it arises;
2. Perceptive agents to provide survivor support and identify "tipping points" where intervention could prevent exploitation, or re-exploitation of individuals or communities;
3. A common framework for data standards that allow for identification and aggregation of meaningful sources of actionable intelligence, while maintaining data security.
4. Data fusion and surveying: ethics-infused AI techniques that integrate, process and make sense of diverse and heterogeneous data.

As a continuation of the discussions in the March 2020 workshop, this webinar further outlined some pertinent considerations for incorporating AI tools into anti-slavery praxis.

Artificial Intelligence is not a panacea

AI is a tool that can facilitate efforts to combat modern slavery, but it is not a cure-all and its efficacy will require significant advance groundwork. In order to accomplish this, employment of AI must be anchored in human rights considerations and developed in cooperation with local actors, especially survivors. For example, the Rights Lab's ASTUS project, which explored what would be needed to build a Modern Anti-trafficking Support System (MASS) underpinned by Earth observation (EO) data in Uganda, was enriched and made possible through on-the-ground intelligence and engagement with the Ugandan government and local NGOs. Through this engagement, the project was able to attain a good understanding of what EO data would be useful and which AI approaches would work.

Risks and Challenges of AI

Effective AI tools are contingent on the availability of and access to clean and reliable data, which might be a challenge in certain contexts. Often, the areas where exploitation takes place are not equipped with the technical infrastructure and/or personnel necessary to process data. Data is also often siloed in different organizations due to security concerns or lack of cooperation among stakeholders. It is thus imperative to foster cross-organizational collaboration, while ensuring security and privacy are protected. Relatedly, security and privacy must be carefully considered and addressed when handling highly sensitive data that can expose vulnerable communities to further harm and exploitation.

Promises and Opportunities of AI

AI tools hold immense potential for augmenting anti-slavery action. Machine learning techniques can help identify trends using proxy variables, which, in turn, can be used to create risk models to estimate vulnerability without the need for costly and time-consuming surveys. For example, N/Lab used mobile phone data—specifically mobile money—to predict the incidence of forced labour in Dar es Salaam. The AI models revealed that areas with increased

use of mobile money have lower likelihood of forced labour. Similarly, the Rights Lab used DigitalGlobe—WorldView, and CNES/Airbus—SPOT and Pléiades 1A/1B to map the location and impacts of fish processing in the Bangladesh's Sundarbans mangrove forests. Previous studies had identified cases of labour exploitation and modern slavery occurring within the Sundarbans, and remote sensing was used to triangulate these claims by providing spatial and temporal analysis to increase the understanding of the operational trends at these locations. The researchers identified a cyclical relationship between modern slavery and environmental degradation, whereby environmental damage is both a driver and result of workers subjected to modern slavery.

AI, computational science and machine learning constitute promising tools that can support anti-slavery action. These tools must be grounded in local knowledge, survivor expertise, and human rights and ethical considerations. Computer science research should integrate with other fields, namely the social sciences and humanities, to ensure that AI initiatives do not imperil vulnerable communities or undermine the social good. The AI community must also consider ways to ensure data privacy and security and to support local NGOs and governments to build an infrastructure that protects privacy.

This article has been prepared by Nadya Bliss, Doreen Boyd, Alice Eckstein, James Goulding, Anjali Mazumder, Ben Harris, Nesrien Hamid as a contribution to Delta 8.7. As provided for in the Terms and Conditions of Use of Delta 8.7, the opinions expressed in this article are those of the authors and do not necessarily reflect those of UNU or its partners.