Presenter Notes: On the Dangers of AI Autism Diagnosis

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7 March 2024

1 Overview 1

- Getting started
- Technical, free to ask questions

2 What is AIAD?

- Rigor involved in getting an ASD diagnosis
- A rapidly growing field in machine learning research
- EBSCO search for `AI (AND) Autism (AND) diagno*` gave 65 results: **20** of them are from **2023**, **10** from **2022**.
- Trying... *trying...* to employ various machine learning techniques in the detection of ASD

3 Problems in General ML Research

- Taking a step back from AIAD for a second.
- What are the problem areas in general ML research?
- Models are growing faster than technology
- Increasing model size means increasing scale of data needed
- In the current hot topic of LLMs such as ChatGPT, where does the data come from? How is it filtered? What bias is intrinsic to the dataset?
- No such thing as a perfect filter. Demographics of who edits Wikipedia?
- In a **2020 UW** study, GPT-2 produced toxic responses to *at best* 17% of innocuous prompts, even after the best "conditioning" the study performed.

4 Disability Invisibility

- Won't spend too much time here...
- Treatment of disabled as sub-human, lesser
- In much of ML research, gender and race are frequently "protected characteristics". Disability often unmarked; *maybe* a footnote.
- Conventional AI bias metrics actively blind to ableism; "fairness", tying into WW-II masculinity(?)

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5 Defining Autism

- How is autism defined in society?
- People who I shall not say their names aloud
- Indirect inhumanity
- AI ethics predicated on personhood; "viable knowers"

6 Current AIAD Literature

- What are researchers currently doing?
- Two main tracks: the MRI/EEG-based approach, the behavioral approach, and their intersection.

6.1 MRI

- Most studies use the ABIDE dataset, an aggregation of 3D MRI brain scans from various institutions.
- The average from a 2021 review shows that the models "get it correct" about 78% of the time.

6.2 Behavioral

- Essentially trying to streamline traditional assessments
- Perpetuating the same biases as those assessments

6.3 Intersection

- Computer vision on stimming behaviors
- eye tracking
- NLP

7 Problems in AIAD

- Conclusions, wrap up