Neuroethics and KR

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PURPOSE OF THE TALK

TO RELATE KNOWLEDGE REPRESENTATION IN AI TO NEUROSCIENCE DATA VIA NEUROETHICS

TO CHARACTERIZE THIS RELATION AND TO INTRODUCE FUTURE WORK
NEUROETHICS

REPRESENTATION

Responsible use of brain science data, methods, techniques

ISSUES:

Proliferation of data

Mass access

KNOWLEDGE IN TRADITIONAL AI

TECHNIQUES METHODS

ARTERFACTS

TO REPRESENT FACTS/AXIOMS/RULES USED TO SUPPORT AUTOMATED REASONING

ISSUES; KR BECOMING RELEVANT TO OTHER CONTEXTS
WHAT IS NEW?

Neuroscience and AI are converging at increasing rate.

Neuroscience research data is becoming vast, cannot be easily managed/controlled/data acquisition tools are easily accessible.

Researchers who want to use neuroscience data unethically simply do so and ignore neurethics and will continue to do so.

Ethical concerns are becoming applicable across disciplines (neuroscience, AI and systems in general).
KEY POINT

Knowledge representation supports

CONSISTENCY, INTEGRITY

ADHERENCE TO ETHICAL POLICY

CLARITY/TRANSPARENCY

AUDITABILITY
Knowledge Representation, New Roles

In addition to kr ROLES AS IDENTIFIED IN CS LITERATURE (which is vast)
KR FOR DEBIASING,
FOR KNOWLEDGE INTEGRITY AND CONSISTENCY
TO IMPLEMENT AND MANAGE ETHICAL POLICIES
KR TO SUPPORT DATA INTEGRITY ACROSS THE LIFECYCLE
KR TO ENSURE FAT (FAIRNESS ACCOUNTABILITY TRANSPARENCY)
FOR ALGORITHMIC AUDITABILITY
Intersection

Knowledge Representation

Neuroethics

- Clarity
- Persistent descriptions
- Explainability
- Auditability
- Transparency
- Auditability
- Accuracy

Neuroscience

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CONTRIBUTIONS

NEW ROLES FOR KNOWLEDGE REPRESENTATION
A MODEL WHICH USES KR CONSTRUCTS AND PRINCIPLES
TRANSDISCIPLINARITY/INTEGRATION
COHERENCE
SYSTEM LEVEL/KR
Thank you for listening

VERY SHORT TALK, APOLOGIES FOR THE BREVITY

Interested to work on this?

Lets talk!!

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REFERENCES
