



Neuroethics and KR

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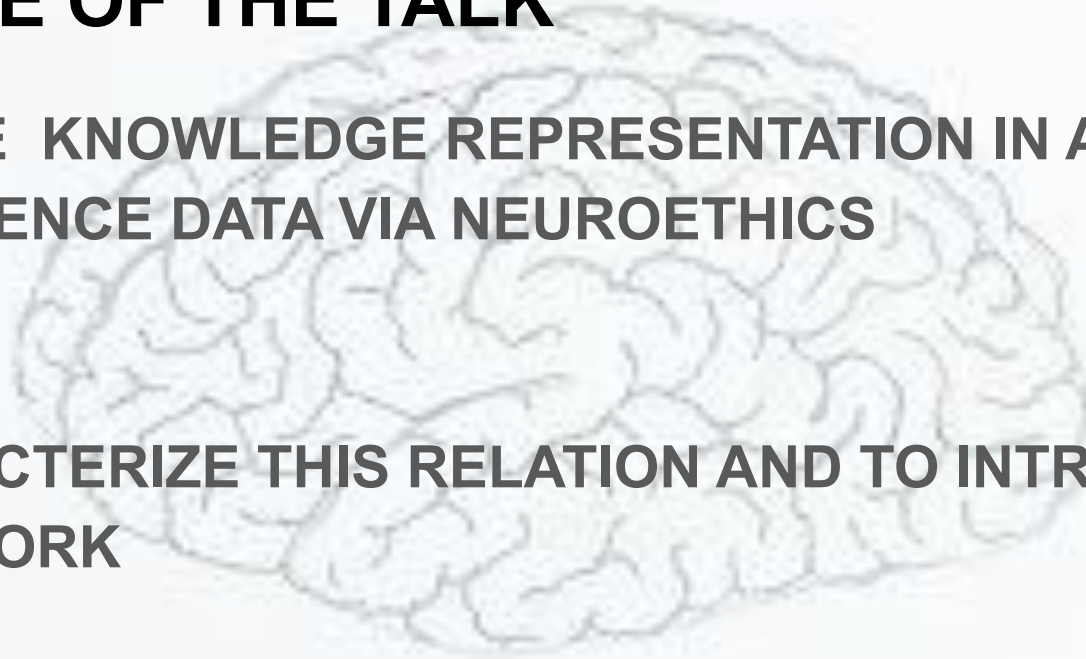
*Center for Systems Knowledge Representation and
Neuroscience*

NEUROETHICS SOCIETY 2020

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

ARTIFACTS

TO REPRESENT f ACTS/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 beoming appllicable 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

CONTRIBUTIONS

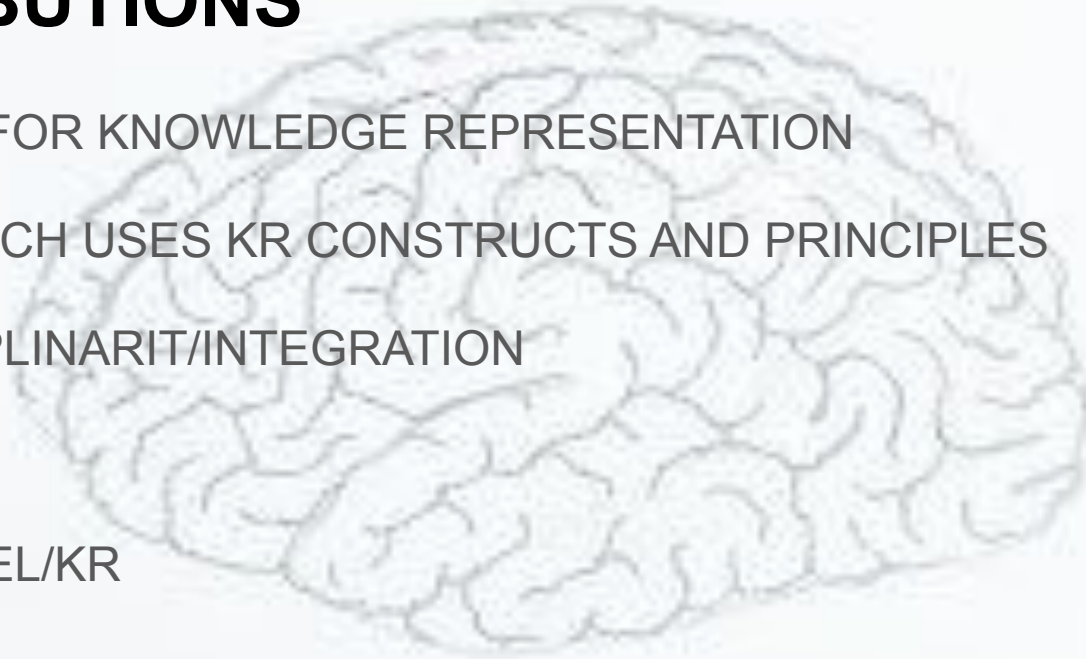
NEW ROLES FOR KNOWLEDGE REPRESENTATION

A MODEL WHICH USES KR CONSTRUCTS AND PRINCIPLES

TRANSDISCIPLINARIT/INTEGRATION

COHERENCE

SYSTEM LEVEL/KR



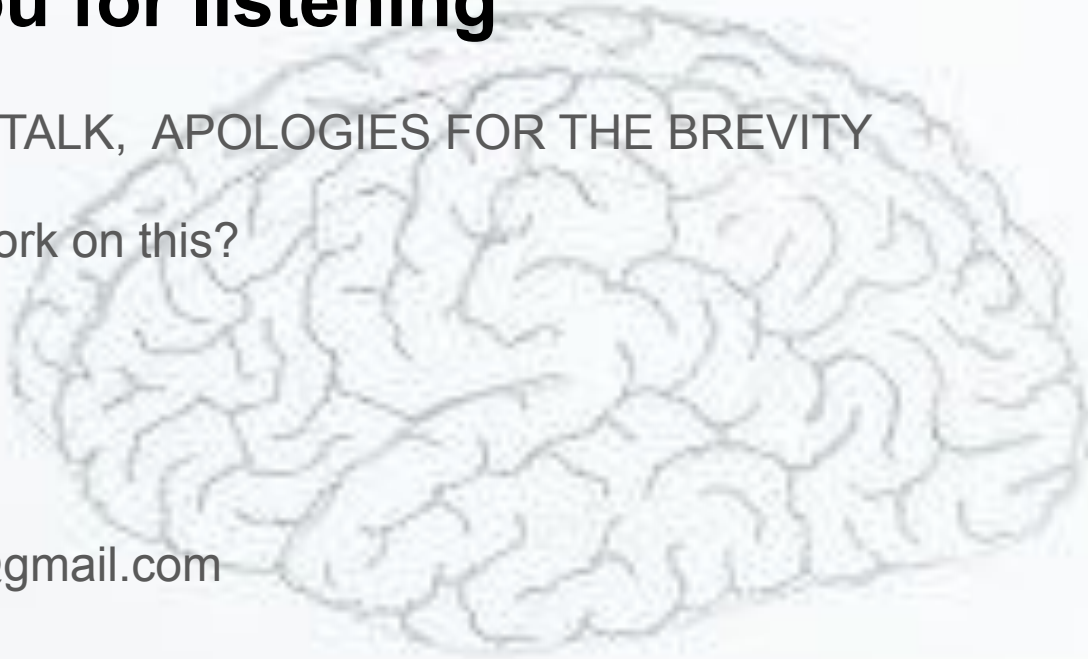
Thank you for listening

VERY SHORT TALK, APOLOGIES FOR THE BREVITY

Interested to work on this?

Lets talk!!

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REFERENCES

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