M-Networks

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An M-Network is a network of edges and vertices where the edges are marked with a logical operator, and the nodes represent objects or conditions. For any corpus of text, that text can be represented with an M-Network and any mathematical axiom can be represented by an M-Network.

# introduction

An M-Network is a graph with objects that are nodes and edges denoted with M-Operators that are mathematical operators taken from formal logic and object oriented schemes. We conjecture that any piece of written work can be converted into an M-Network.

# definition of an m-network

An M-Network is the tuple

M = < V, E > where V is the set of vertices and E is the set of edges. Given any vertex V it contains the existential or universal quantifiers. E is the set of edges and given any edge E contains a single M-Operator.

# M-Operators

The following are the M-Operators and their plain English meanings:

(self-loop)

# M-Network Hypothesis

Any mathematical expression is equivalent to an M-Graph. Any natural language sentence can be expressed as a M-Network. M-Graphs are not order preserving that is, they are undirected graphs but use M-Operators to indicate order.

# Proof

Proof by Induction:

Base Case:

Nodes n =1 so vacuously true

Inductive Case:

Given n nodes, each has an encoding as a Gödel number, Gx, If so, the relation represented by the nodes of the M-Network should result in another series of Gödel numbers.

We can take that encoding as a number and map it to a part of the language: a word. For any word can be represented by a series of numbers. If there are an infinite number of Gödel numbers and any number can be used to represent a part of language, with an infinite number of numbers an infinite number of languages can be represented.