Why

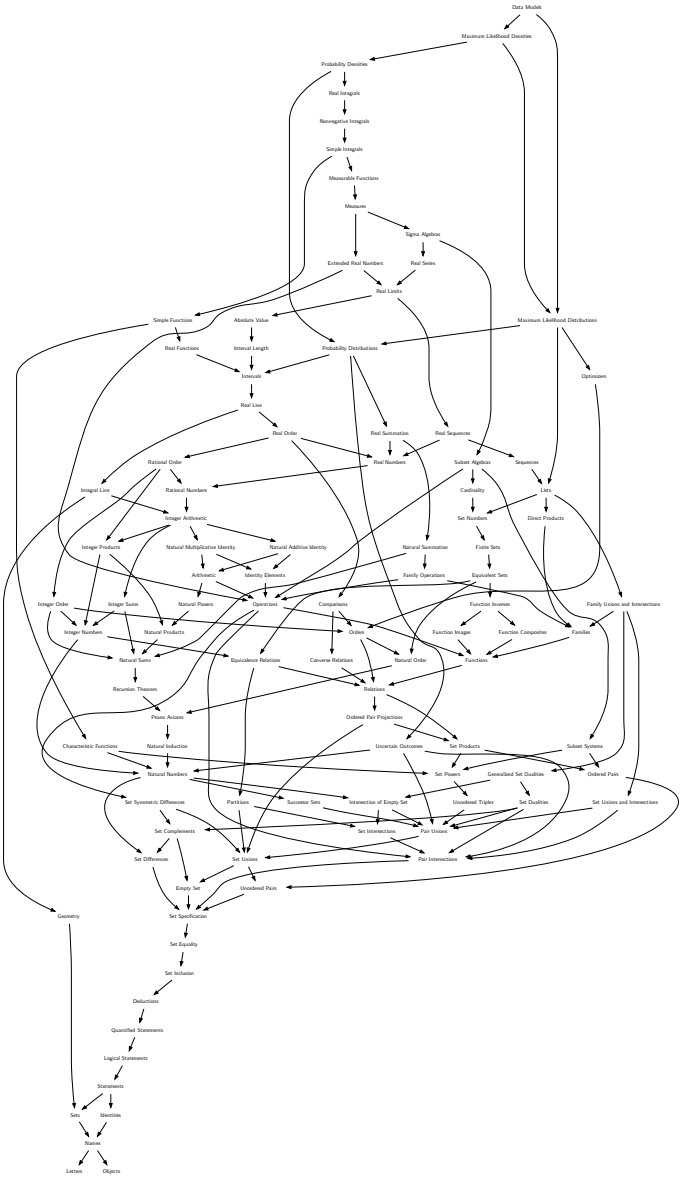
A distribution/density selector picks a probabilistic model for a dataset by using the maximum likelihood principle. We want to generalize this idea.[1]

Definition

An *unsupervised data model* is a function $\ell : \mathbf{R}^d \to \mathbf{R}$ where $\ell(x)$ is the *suprise* of the vector x.[2]

[1] Future editions probably include a genetic approach, which moves through clustering and mixtures of Gaussians to illustrate the point more fully.

[2] Future editions will expand.


Data Models
Maximum Likelihood Densities
Probability Densities
Real Integrals
Nonnegative Integrals
Simple Integrals
Measurable Functions
Measures
Sigma Algebras
Extended Real Numbers
Real Series
Real Limits
Simple Functions
Absolute Value
Maximum Likelihood Distributions
Real Functions
Interval Length
Probability Distributions
Optimizers
Intervals
Real Line
Real Order
Real Summation
Real Sequences
Rational Order
Real Numbers
Subset Algebras
Sequences
Integral Line
Rational Numbers
Cardinality
Lists
Integer Arithmetic
Set Numbers
Direct Products
Integer Products
Natural Multiplicative Identity
Natural Additive Identity
Natural Summation
Finite Sets
Arithmetic
Identity Elements
Family Operations
Equivalent Sets
Integer Order
Integer Sums
Natural Powers
Operations
Comparisons
Function Inverses
Family Unions and Intersections
Integer Numbers
Natural Products
Orders
Function Images
Function Composites
Families
Natural Sums
Equivalence Relations
Converse Relations
Natural Order
Functions
Recursion Theorem
Relations
Peano Axioms
Ordered Pair Projections
Characteristic Functions
Natural Induction
Uncertain Outcomes
Set Products
Subset Systems
Natural Numbers
Set Powers
Generalized Set Dualities
Ordered Pairs
Set Symmetric Differences
Partitions
Successor Sets
Intersection of Empty Set
Unordered Triples
Set Dualities
Set Unions and Intersections
Set Complements
Set Intersections
Pair Unions
Set Differences
Set Unions
Pair Intersections
Empty Set
Unordered Pairs
Geometry
Set Specification
Set Equality
Set Inclusion
Deduction
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects