Why

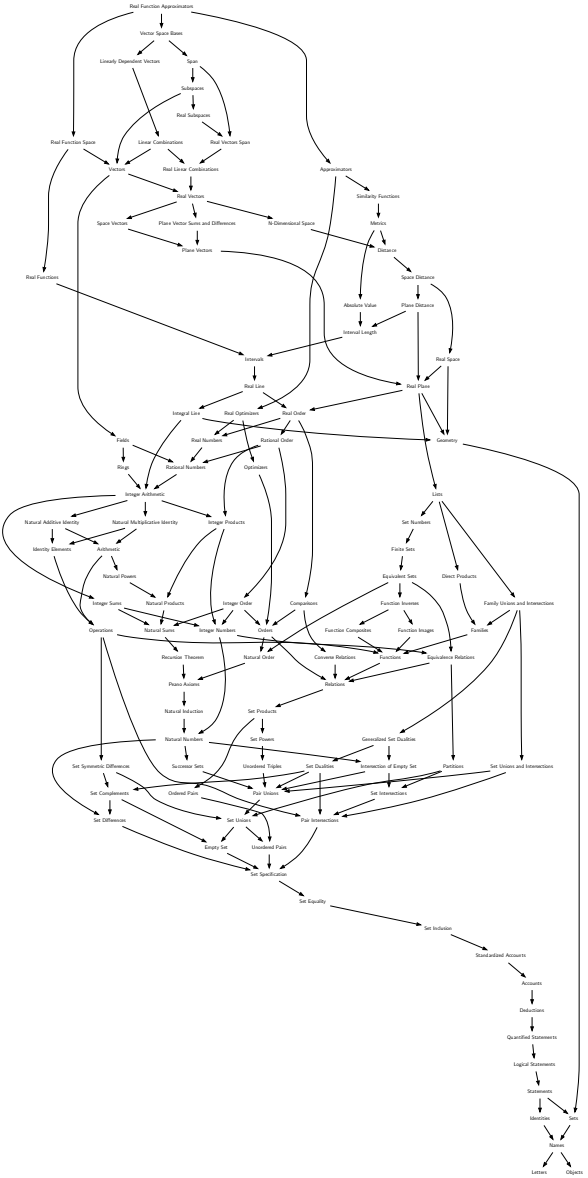
Since the function space $\mathbf{R} \to \mathbf{R}$ is a vector space, can we approximate a "complex" element of this set by some basis of "simpler" functions in $\mathbf{R} \to \mathbf{R}$.

Of course, there may be no set that can represent f. So instead we may be interested in an element $g \in \text{span}\{g_1, \ldots, g_d\}$ which approximates f.[1]

Definition

A *real function approximator* for a function $f : \mathbf{R} \to \mathbf{R}$ is a function $g : \mathbf{R} \to \mathbf{R}$.

[1] Future editions will modify.


Real Function Approximation
Vector Space Bases
Linearly Dependent Vectors
Span
Subspaces
Real Subspaces
Real Function Space
Linear Combinations
Real Vectors Span
Vectors
Real Linear Combinations
Approximation
Similarity Functions
Real Vectors
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Plane Vector Sums and Differences
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Metrics
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Distance
Real Functions
Space Distance
Absolute Value
Plane Distance
Interval Length
Intervals
Real Space
Real Line
Real Plane
Integral List
Real Optimizers
Real Order
Real Numbers
Rational Order
Geometry
Fields
Rings
Rational Numbers
Optimizers
Integer Arithmetic
Lists
Natural Additive Identity
Natural Multiplicative Identity
Integer Products
Set Numbers
Identity Elements
Arithmetic
Finite Sets
Natural Powers
Equivalent Sets
Direct Products
Integer Sums
Natural Products
Integer Order
Comparisons
Function Inverses
Family Unions and Intersections
Operations
Natural Sums
Integer Numbers
Orders
Function Composition
Function Images
Families
Recursion Theorem
Natural Order
Converse Relations
Functions
Equivalence Relations
Peano Axioms
Relations
Natural Induction
Set Products
Natural Numbers
Set Powers
Generalized Set Duplites
Set Symmetric Differences
Successor Sets
Unordered Triples
Set Duplites
Intersection of Empty Set
Partitions
Set Unions and Intersections
Set Complements
Ordered Pairs
Pair Unions
Set Intersections
Set Differences
Set Unions
Pair Intersection
Empty Set
Unordered Pairs
Set Specification
Set Equality
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects