Why

Often there are several good parameters for a predictor.[1]

Definition

A *regularizer* is a nonegative function. Regularizes are sometimes called *penalties*.

For example, least squares predictor with a l_2 regularization is called *ridge regression*.

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[1]Future editions will include a more complete form of this sheet.

Regularizers

Least Squares Linear Regressors

Norms
Linear Predictors
Matrix Transpose
Input Designs
Real Function Approximations
Matrix Inverses

Regressors
Consistent Inductors
Loss Functions
Approximators
Vector Space Bases
Matrix-Matrix Products

Inductions
Similarity Functions
Span
Linear Transformations
Linearly Dependent Vectors
Matrix-Vector Products

Metrics
Functionals
Real Function Space
Subspaces
Transformations
Matrices
Linear Combinations

Absolute Value
Vectors

Datasets
N-Dimensional Space

Real Functions
Distance

Space Distance

Plane Distance

Interval Length

Intervals

Real Line
Real Plane
Real Space

Integral Line
Real Order
Sequences
Real Optimizers

Geometry
Direct Products
Real Numbers
Optimizers

Rational Numbers
Set Numbers
Fields
Groups
Total Orders

Integer Arithmetic
Finite Sets
Integer Additive Inverses
Partial Orders

Natural Additive Identity
Natural Multiplicative Identity
Integer Sums
Inverse Elements

Arithmetic
Identity Elements
Element Functions
Equivalent Sets

Family Unions and Intersections
Natural Powers
Integer Products
Algebras
Function Inverses
Function Composites

Families
Natural Products
Integer Numbers
Operations
Function Images
Functions

Natural Sums
Equivalence Relations

Recursion Theorem
Natural Order
Relations

Peano Axioms

Natural Induction
Cartesian Products

Generalized Set Dualities
Natural Numbers
Set Powers

Set Dualities
Set Unions and Intersections
Successor Sets
Intersection of Empty Set
Unordered Triples
Partitions

Set Complements
Pair Unions
Set Intersections
Ordered Pairs

Set Differences
Pair Intersections
Set Unions

Empty Set
Unordered Pairs

Set Specification

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Sets
Identities

Names

Letters
Objects