Intro to Citrination Data View

Models

Learn more about Model Reports and Machine Learning in our Citrination Knowledge Base.

Property Fatigue strength

Property Fatigue strength

Model Settings

Table representation of the machine learning algorithm and hyperparameters from the most recent machine learning training session. The Lolo estimator is Citrine's open source machine-learning library.

Algorithm: Ensemble of non-linear estimators	
Number of estimators	64
Minimum samples per leaf	1
Maximum tree depth	30
Uses jackknife method of uncertainty estimation	true
Leaf model	Mean

Number of cross-validation folds: 3

Important Features

A list of features used to train the model ranked by importance scores. Importance scores sum to 1 and are representative of a given feature's contribution to the model's performance. Learn about the features that are used as inputs to machine learning models on the Citrination Platform.

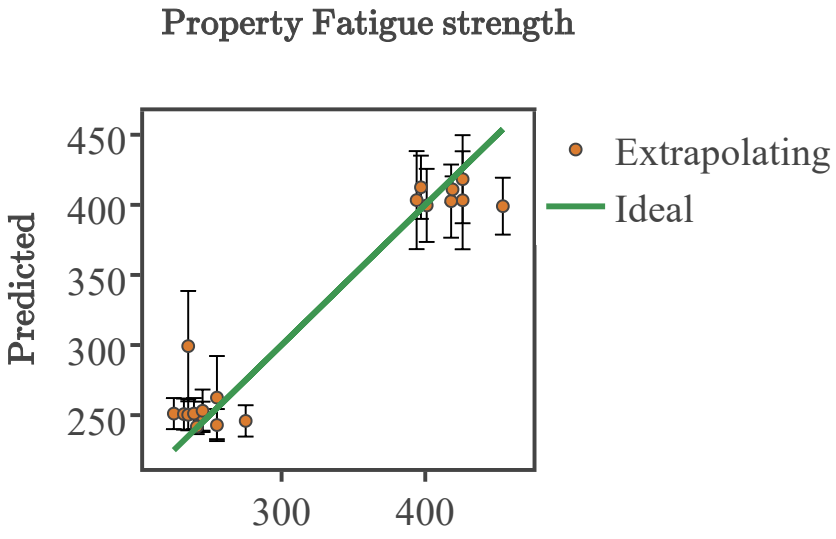
Property Fatigue strength	
Maximum weight fraction for formula	17%
mean of Valence electron density for formula	12%
mean of Elemental work function for formula	12%
Property Through hardening temperature	12%
mean of DFT energy density for formula	8%
mean of Number of p valence electrons for formula	8%
mean of Elemental melting temperature for formula	8%
mean of DFT volume ratio for formula	8%
mean of Liquid ratio for formula	6%
mean of Radius of d orbitals for formula	5%
mean of Liquid range for formula	3%

Training Data

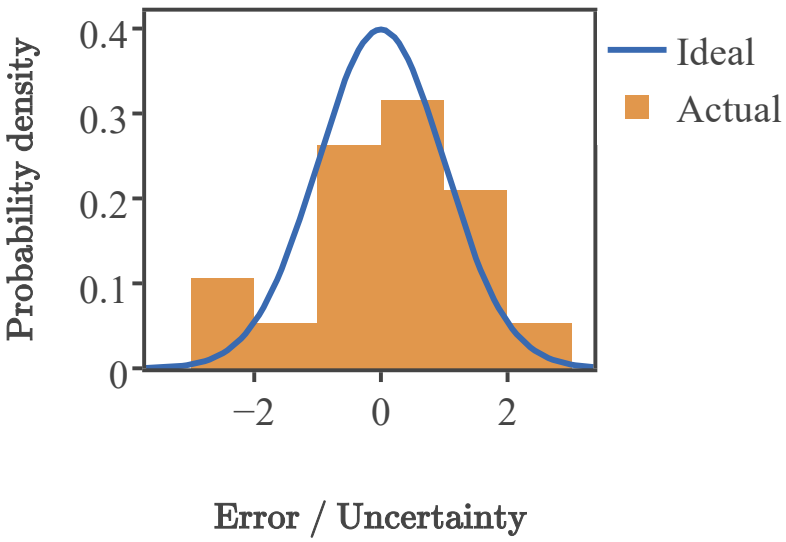
A description of the training data used to train the model. Displayed below are the number of training examples and a distribution of values for the given property.

Performance

Error Metric	Value
Non-dimensional model error (NDME) (0.0 for a perfect model)	0.276
Standard error in the estimate of NDME (0.0 for a perfect estimate)	0.127
Root mean squared error (RMSE) (0.0 for a perfect model)	23.9
Standard Error in the estimate of RMSE (0.0 for a perfect estimate)	11.1
Uncertainty calibration: fraction of actual values within the prediction error bars (0.68 is perfectly calibrated)	0.579
Uncertainty calibration: root mean square of standardized errors (RMSSE) (1.0 is perfectly calibrated)	1.30



Distribution of Standard Residuals



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