Wolfram Machine Learning A CORE PART OF WOLFRAM LANGUAGE

Machine Learning & Neural Networks. From productiongrade classic machine learning to modern artificial intelligence, with deep integration with statistical analysis, visualization, image processing and more to build intelligent systems.





Classification

Immediately use pre-trained classifiers or build your own to classify any data, including text, images, arrays, audio and video, into a finite number of categories. Examples include identifying plant leaves, bird calls or human actions. Available methods range from logistic regression, random forest and support vector machines to neural networks.

Regression

Forecast prices or predict treatment effects or crop yields: use regression analysis everywhere to predict a value from a set of variables, including numbers, arrays, images and text. Use powerful feature extraction from any data type and then let automation select the best model and parameters, or customize with full control.





Cluster Analysis

Group together different objects based on their similarity, without prior knowledge, with unsupervised classification. Clustering can be used to categorize customer types, animal taxonomies and many more groups. Different methods, including k-means, spectral and hierarchical clustering, are supported.

Dimensionality Reduction

Represent any data in a low-dimensional space to visualize complex datasets with several features (including nonnumerical ones) and perform data compression or even unsupervised feature selection. A variety of methods like principal components, isometric mapping, T-SNE and UMAP allows modeling both linear and nonlinear structures.





DimensionReduce



Anomaly Detection

Detect extreme, novel or unusual values. Flag anomalies directly on a dataset, build a reusable anomaly detector or start from a distribution built from any type of data. Applications range from fault detection to performance monitoring, quality assessment, novelty detection and more.

Missing Data Imputation

Fill the missing values in your dataset with synthetic data generation. Data missing because of equipment malfunctions, corrupted files or incomplete data entry can introduce significant biases in model training or even make the training impossible. Impute missing values automatically or using a given distribution.





Neural Networks

Is the rainforest healthy? Is there a tumor in this MRI scan? How do you say "cat" in French? Use neural networks to answer these previously hard questions with a simple but flexible framework. Import pre-trained models, adapt models to new problems by retraining them or train a network from scratch.

Natural Language Processing

Find the answer to a question in a piece of text, tag every mention of a specific concept or analyze the syntactical structure of a sentence. Natural language processing is a key ingredient in fields like data mining, market research and customer support.

International Space Station
satelliteis a large spacecraft.It weights almost a
quantitymillion pounds
quantityand can host
quantity6 people
quantityThe station orbits around
planetEarth
planetat roughly
quantity5 miles per second
quantity



Computer Vision

Efficiently and accurately find and recognize objects, text, faces and more in images, or perform advanced segmentation, stylization and much more using machine learning and neural network models. Solutions are used everywhere from driver assistance systems to automated quality control, security, medical and other applications.

Speech Computation

Analyze and process speech signals to detect voiced intervals, perform speech recognition, identify speakers or even change the speaker pitch. Use machine learning together with audio processing, statistical analysis and visualization to enable easy and highly efficient speech computation.



Wolfram Machine Learning Documentation

Wolfram Machine Learning is an integrated part of *Wolfram Language*. The full system contains over 6,000 built-in functions covering all areas of computation—all carefully integrated so they work perfectly together.

Core Language & Structure	Data Manipulation & Analysis	Visualization & Graphics	GUIDE	[EXPERIMENTAL]	Neural Networks in the Wolfram
Machine Learning	Symbolic & Numeric Computation	Higher Mathematical Computation	Dota-driven applications are ublquitsus (market avalysis, agriculture, bealthcare, transport networks,) and machine learning algorithms have been developed with the specific purpose of analysing patterns and leveraging correlation	Neural Networks Neural networks are a powerful motion larving technique that allows a modular composition of operations (bayrol) that can india via via india of functions with this denotication and training parformance. Neural networks are typically reduces in only input and dring powerful to capabilities. They was a central composation in many sens, the regress of sub-processing, summal targeng providences in power and the composition of any operation of non-	Language The Windows Language has state of the art capabilities for the construction, training and deployment, of normal network methics launting systems. Have, standard layer types are scalabilitie and are assembled symbolically into a network, which can then be immediately trained and deployed on available CPUs and dPUs.
Strings & Text			within real-world measurements in order to tum data into applications. The Wolfram Language offers fully automated and highly castomizable machine learning functions to perform classification, regression, classificity and many other operations. Classical methods are complemented by powerful,		
Geometry		Knowledge Representation & Natural Language	symbolic deep-learning frameworks and specialized pipelines for diverse data types such as image, video, text and audio.	The Wolfram Language offers advanced capabilities for the representation, construction, training and deployment of neural networks. A large variety of larger types is available for symbolic composition and manipulsation. Thanks to dedicated encoders and decoders, diverse data types such as image, test and audio can be used as input and output,	VIntroduction Leftet and INNIST
Time-Related Computation	Geographic Data & Computation	Scientific and Medical Data & Computation	Supervised Machine Learning > Predict predict values from data	deepening the integration with the rest of the Wolfnam Language. Construction and Properties *	Lyps Net Ecoder Net Ecoder Network Thinks Couluition Co
Engineering Data & Computation	Financial Data & Computation	Social Cultural & Linguistic Data	Casady – casady data into categoine termination of the case of the	Kettidedi – complete pro-trained net models NetCapie – symbolic representation of fusioned or untrained net graphs to be applied to data NetCapie – symbolic representation of a simple chain of layers NetCapieur-symbolic representation of a simple chain of the set	
Notebook Documents & Presentation	User Interface Construction	System Operation & Setup			
External Interfaces & Connections	Cloud & Deployment	Recent Features	Feature SpaceField — Visualize data in a dimension evolution factor with Feature SpaceField — Visualize data in a dimension evoluted feature space Feature ImpactField — visualize the Impact of the Input features on a model result	Neural Network Layers >	

Wolfram Language Full Scope & Documentation reference.wolfram.com »

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Wolfram Supports Organizations Large and Small



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